

1 **Professional Information for MenQuadfi**

2 **SCHEDULING STATUS:**

3 **S4**

4
5 **1. NAME OF THE MEDICINE**

6 MenQuadfi (solution for injection)

7 Meningococcal (Groups A, C, Y, W) Polysaccharide Tetanus Toxoid Conjugate Vaccine.

8
9 **2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

10 **Composition per 0,5 mL dose:**

11 Active substance:

12 *Neisseria meningitidis* group A polysaccharide¹ 10 micrograms

13 *Neisseria meningitidis* group C polysaccharide¹ 10 micrograms

14 *Neisseria meningitidis* group Y polysaccharide¹ 10 micrograms

15 *Neisseria meningitidis* group W polysaccharide¹ 10 micrograms

16 ¹Conjugated to tetanus toxoid carrier protein 55 micrograms

17
18 For the full list of excipients, see section 6.1.

19
20 **3. PHARMACEUTICAL FORM**

21 Solution for injection.

22 Clear colourless solution.

23
24 **4. CLINICAL PARTICULARS**

25 **4.1 Therapeutic indications**

26 MenQuadfi is indicated for active immunisation of individuals from the age of 12 months and older
27 against invasive meningococcal disease caused by *Neisseria meningitidis* serogroups A, C, W,
28 and Y.

29 The use of this vaccine should be in accordance with available official recommendations.

30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58

4.2 Posology and method of administration

Posology

Primary vaccination:

- Individuals 12 months of age and older: One single dose (0,5 mL).

Booster vaccination:

- A single 0,5 mL dose of MenQuadfi may be used to boost subjects who have previously received a meningococcal vaccine containing the same serogroups (see section 5.1).
- Long-term antibody persistence data following vaccination with MenQuadfi are available up to 7 years after vaccination (see sections 4.4 and 5.1).

Other paediatric population

The safety and immunogenicity of MenQuadfi in individuals under 12 months of age have not yet been established.

Method for administration

For intramuscular injection only, preferably in the deltoid region or anterolateral thigh depending on the recipient's age and muscle mass.

For instructions on handling of the vaccine before administration, see section 6.6.

4.3 Contraindications

Hypersensitivity to the active substances or to any of the excipients listed in section 6.1 or after previous administration of the vaccine or a vaccine containing the same components.

4.4 Special warnings and precautions for use

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

59 MenQuadfi should not be administered subcutaneously, intravascularly or intradermally.

60

61 It is good clinical practice to precede vaccination by a review of the medical history (especially with
62 regard to previous vaccination and possible occurrence of undesirable effects) and a clinical
63 examination.

64

65 **Hypersensitivity**

66 As with all injectable vaccines, appropriate medical treatment and supervision should always be
67 readily available in case of an anaphylactic event following administration of the vaccine.

68

69 **Intercurrent illness**

70 Vaccination should be postponed in individuals suffering from an acute severe febrile illness.

71 However, the presence of a minor infection, such as cold, should not result in the deferral of
72 vaccination.

73

74 **Syncope**

75 Syncope (fainting) and other anxiety-related reactions can occur following or even before any
76 vaccination as a psychogenic response to the needle injection. Procedures should be in place to
77 prevent falling or injury and to manage syncope.

78

79 **Thrombocytopenia and coagulation disorders**

80 MenQuadfi should be given with caution to individuals with thrombocytopenia or any coagulation
81 disorder that would contraindicate intramuscular injection, unless the potential benefit clearly
82 outweighs the risk of administration.

83

84 **Protection**

85 MenQuadfi will only protect against *Neisseria meningitidis* groups A, C, W, and Y. The vaccine will
86 not protect against any other *Neisseria meningitidis* groups.

87

88 As with any vaccine, vaccination with MenQuadfi may not protect all vaccine recipients.
89 Waning of serum bactericidal antibody titres against serogroup A when using human complement
90 in the assay (hSBA) has been reported for MenQuadfi and other quadrivalent meningococcal
91 vaccines. The clinical relevance of this observation is unknown. However, if an individual is
92 expected to be at particular risk of exposure to serogroup A and received a dose of MenQuadfi
93 more than approximately one year previously, consideration may be given to administering a
94 booster dose.

95
96 Lower hSBA geometric mean titres (GMTs) against serogroup A have been observed after a single
97 dose of MenQuadfi was administered to toddlers who previously received serogroup C
98 meningococcal conjugate vaccine (MenC-CRM) during infancy. Nevertheless, seroprotection rates
99 were comparable between treatment groups (see section 5.1). The clinical relevance of this
100 observation is unknown. This aspect might be considered for individuals at high risk for MenA
101 infection who received MenC-CRM vaccine in their first year of life.

102

103 **Immunodeficiency**

104 It may be expected that in patients receiving immunosuppressive persons treatment or patients
105 with immunodeficiency, an adequate immune response may not be elicited (see section 4.5).
106 Persons with familial complement deficiencies (for example, C5 or C3 deficiencies) and receiving
107 treatments that inhibit terminal complement activation (for example, eculizumab) are at increased
108 risk of invasive disease caused by *Neisseria meningitidis* groups A, C, W, and Y, even if they
109 develop antibodies following vaccination with MenQuadfi. No data on immunocompromised
110 patients are available.

111

112 **Tetanus immunisation**

113 Immunisation with MenQuadfi vaccine does not substitute for routine tetanus immunisation.
114 Co-administration of MenQuadfi with a tetanus toxoid-containing vaccine does not impair the
115 response to tetanus toxoid or impact the safety.

116

117 **Sodium content**

118 This medicine contains less than 1 mmol sodium (23 mg) per dose that is to say essentially
119 'sodium-free'.

120

121 **4.5 Interaction with other medicines and other forms of interaction**

122 **Use with other vaccines**

123 Injection sites on separate limbs and separate syringes must be used in the case of concomitant
124 administration.

125 For ages 12 – 23 months, MenQuadfi can be co-administered with the measles-mumps-rubella
126 vaccine (MMR) and varicella vaccine (V), combined diphtheria - tetanus - acellular pertussis
127 (DTaP) vaccines, including combination DTaP vaccines with hepatitis B (HBV), inactivated
128 poliovirus (IPV) or *Haemophilus influenzae* type b (Hib) such as DTaP-IPV-HB-Hib (Hib conjugated
129 to tetanus toxoid) vaccine and 13-valent pneumococcal polysaccharide conjugated vaccine (PCV-
130 13).

131

132 For ages 10 – 17 years, MenQuadfi can be co-administered with diphtheria, tetanus, pertussis
133 (acellular, component) vaccine (adsorbed, reduced antigen(s) content) (Tdap) and human
134 papillomavirus vaccine (recombinant, adsorbed) (HPV).

135

136 There was no impact on the immune response to MenQuadfi when a meningococcal serogroup B
137 vaccine was co-administered.

138

139 MenQuadfi can be administered concomitantly with PCV-13. Lower hSBA GMTs on day 30 post-
140 dose for serogroup A has been observed when given concomitantly. The clinical relevance of this
141 observation is unknown. As a precaution in children 12 – 23 months of age at high risk for
142 serogroup A disease, consideration might be given for administration of MenQuadfi and PCV-13
143 vaccines separately.

144

145 Meningococcal vaccine naïve children aged 10 – 17 years had non inferior response for PT and

146 lower antibody responses to FHA, PRN and FIM when Tdap vaccine was administered
147 concomitantly with MenQuadfi and HPV compared to co-administration with HPV vaccine alone.
148 The clinical implications of the observed pertussis antigen responses also observed with the
149 existing quadrivalent meningococcal conjugate vaccines are unknown.

150
151 Concomitant vaccines should always be administered at separate injection sites and preferably
152 contralateral.

153
154 Concomitant administration of MenQuadfi and other vaccines than those listed above has not been
155 studied.

156

157 **Use with systemic immunosuppressive medicinal products**

158 It may be expected that in patients receiving immunosuppressive treatment an adequate immune
159 response may not be elicited (see also section 4.4).

160

161 **4.6 Fertility, pregnancy and lactation**

162 **Pregnancy**

163 There is limited amount of data on the use of MenQuadfi in pregnant women. Animal studies do
164 not indicate direct or indirect harmful effects with respect to reproductive toxicity (see section 5.3).
165 MenQuadfi should be used during pregnancy only if the expected benefits for the mother outweigh
166 the potential risks, including those for the foetus.

167

168 **Breastfeeding**

169 It is unknown whether MenQuadfi is excreted in human milk. MenQuadfi should only be used
170 during breast-feeding when the possible advantages outweigh the potential risks.

171

172 **Fertility**

173 A developmental and reproductive toxicity study was performed in female rabbits. There were no
174 effects on mating performances or female fertility. No study was conducted on male fertility (see

175 section 5.3).

176

177 **4.7 Effects on ability to drive and use machines**

178 MenQuadfi has no or negligible influence on the ability to drive and use machines. However, some
179 of the effects mentioned under section 4.8 “Undesirable effects” may temporarily affect the ability
180 to drive or use machines.

181

182 **4.8 Undesirable effects**

183 **Summary of the safety profile**

184 The safety of a single dose of MenQuadfi in individuals 12 months of age and older was evaluated
185 in seven randomized, active-controlled, multi-centre pivotal studies. In these studies,
186 6 308 subjects received either a primary dose (N=5 906) or a booster dose (N=402) of MenQuadfi
187 and were included in the safety analyses. This included 1 389 toddlers aged 12 through 23 months
188 of age, 498 children aged 2 through 9 years, 2 289 adolescents aged 10 through 17 years,
189 1 684 adults aged 18 through 55 years, 199 older adults aged 56 through 64 years, and
190 249 elderly aged 65 years and older. Of these, 392 adolescents received MenQuadfi co-
191 administered with Tdap and HPV, and 589 toddlers received MenQuadfi co-administered with
192 MMR+V (N=189), DTaP-IPV-HB-Hib (N=200) or PCV-13 (N=200).

193

194 The most frequently reported adverse reactions within 7 days after vaccination with a single dose
195 of MenQuadfi alone in toddlers 12 through 23 months of age were irritability (36,7 %) and injection
196 site tenderness (30,6 %) and in ages 2 years and above were injection site pain (38,7 %) and
197 myalgia (30,5 %). These adverse reactions were mostly mild or moderate in intensity.

198 Rates of adverse reactions after a booster dose of MenQuadfi in adolescents and adults at least
199 15 years of age were comparable to those seen in adolescents and adults who received a primary
200 dose of MenQuadfi.

201

202 Rates of adverse reactions within 7 days following vaccination among or toddlers were comparable
203 when MMR+V were given concomitantly with without MenQuadfi, and when DTaP-IPV-HB-Hib was

204 given with or without MenQuadfi. Overall, the rates of adverse reactions were higher in toddlers
205 who received PCV-13 given concomitantly with MenQuadfi (36,5 %) than in toddlers who received
206 PCV-13 alone (17,2 %).

207

208 In one additional clinical study, adolescents and adults 13 – 26 years of age primed with
209 MenQuadfi 3 – 6 years previously received MenQuadfi co-administered with meningococcal
210 serogroup B (MenB) vaccine, Trumenba (N=93) or Bexsero (N=92).

211 Rates and intensity of systemic reactions within 7 days following vaccination tended to be higher
212 when MenQuadfi was given concomitantly with MenB vaccine than when MenQuadfi was given
213 alone. The most common solicited systemic reaction was myalgia, of mild intensity, which was
214 experienced more frequently in adolescents and adults who received MenQuadfi and MenB
215 vaccine concomitantly (Trumenba, 65,2 %; Bexsero, 63 %) compared to those who received
216 MenQuadfi alone (32,8 %).

217

218 **Tabulated list of adverse reactions**

219 The following adverse reactions, as listed below, have been identified from clinical studies
220 conducted with MenQuadfi when given alone to subjects 2 years of age and older. The safety
221 profile observed in toddlers aged 12 through 23 months is presented in the paediatric population
222 section.

223

224 The adverse reactions are listed according to the following frequency categories:

225 Very common ($\geq 1/10$);

226 Common ($\geq 1/100$ to $< 1/10$);

227 Uncommon ($\geq 1/1\ 000$ to $< 1/100$);

228 Rare ($\geq 1/10\ 000$ to $< 1/1\ 000$).

229 Within each frequency grouping, adverse reactions are presented in order of decreasing
230 seriousness.

231

232 **Table 1: Tabulated summary of adverse reactions following administration of MenQuadfi**
 233 **from clinical trials in subjects 2 years of age and above.**

MedDRA System Organ Class	Frequency	Adverse reactions
Blood and lymphatic system disorders	Rare	Lymphadenopathy
Nervous system disorders	Very common	Headache
	Uncommon	Dizziness
Gastrointestinal disorders	Uncommon	Vomiting, nausea
	Rare	Diarrhoea, stomach pain
Skin and subcutaneous tissue disorders	Rare	Urticaria, pruritus, rash
Musculoskeletal and connective tissue disorders	Very common	Myalgia
	Rare	Pain in extremity
General disorders and administration site conditions	Very common	Malaise
		Injection site pain
	Common	Fever
		At the injection site: swelling, erythema
	Uncommon	Fatigue
		At the injection site: pruritus, warmth, bruising, rash
	Rare	Chills, axillary pain
		At the injection site: induration

234

235 **Paediatric population**

236 The safety profile of MenQuadfi in children and adolescents 2 through 17 years of age was
 237 generally comparable to that in adults. Injection site erythema and swelling at the MenQuadfi
 238 injection site were reported more frequently in children 2 through 9 years of age (very common)
 239 than in the older age groups.

240

241 In toddlers 12 through 23 months of age, injection site erythema and swelling (very common) at the
242 MenQuadfi injection site, vomiting (common) and diarrhoea (common), were reported more
243 frequently than in the older age groups. The following additional reactions, as listed below in
244 Table 2, have been reported very commonly or commonly following administration of MenQuadfi in
245 toddlers during clinical trials:

246

247 **Table 2: Tabulated summary of adverse reactions following administration of MenQuadfi**
248 **from clinical trials in subjects 12 months through 23 months**

MedDRA System Organ Class	Frequency	Adverse reactions
Metabolic and nutrition disorders	Very common	Appetite lost
Psychiatric disorders	Very common	Irritability
	Uncommon	Insomnia
Nervous system disorders	Very common	Drowsiness
Gastrointestinal disorders	Common	Vomiting, diarrhoea
Skin and subcutaneous tissue disorders	Uncommon	Urticaria
General disorders and administration site conditions	Very Common	Abnormal crying
		At the injection site: tenderness/pain, erythema, swelling
	Common	Fever
	Uncommon	At the injection site: pruritus, induration, bruising, rash

249

250 **Older population**

251 Overall, within 7 days after vaccination with a single dose of MenQuadfi, the same injection site
252 and systemic adverse reactions were observed in older (≥ 56 years of age) and younger adults

253 (18 through 55 years old) but at lower frequencies; except for injection site pruritus, which was
254 more frequent (common) in older adults. These adverse reactions mostly were mild or moderate in
255 intensity.

256

257 **Reporting of suspected adverse reactions**

258 Reporting suspected adverse reactions after authorisation of the medicinal product is important. It
259 allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare
260 professionals are asked to report any suspected adverse reactions to

- 261 • the Pharmacovigilance Unit at Sanofi: za.drugsafety@sanofi.com (email) or 011 256 3700
262 (tel), or
- 263 • SAHPRA via the “**6.04 Adverse Drug Reactions Reporting Form**” found online under
264 SAHPRA’s publications: <https://www.sahpra.org.za/Publications/Index/8>

265

266 **4.9 Overdose**

267 Overdose with MenQuadfi is unlikely due to its presentation as a single dose vial. In the event of
268 overdose, monitoring of vital functions and possible symptomatic treatment is recommended.

269

270 **5. PHARMACOLOGICAL PROPERTIES**

271 Category and class: A 30.2 Antigens

272 Pharmacotherapeutic group: meningococcal vaccines

273 ATC code: J07AH08

274

275 **5.1 Pharmacodynamic properties**

276 **Mechanism of action**

277 Anti-capsular meningococcal antibodies protect against meningococcal diseases via complement
278 mediated bactericidal activity.

279 MenQuadfi induces the production of bactericidal antibodies specific to the capsular
280 polysaccharides of *Neisseria meningitidis* serogroups A, C, W, and Y.

281

282 **Immunogenicity**

283 The immunogenicity of a single dose of MenQuadfi for primary vaccination in toddlers (12 –
284 23 months of age), children and adolescents (2 – 17 years of age), adults (18 – 55 years of age)
285 and older adults (56 years and above) was assessed in six pivotal studies and in one additional
286 study in toddlers (12 – 23 months of age). The immunogenicity of a single dose of MenQuadfi for
287 booster vaccination (subjects 15 – 55 years of age) was assessed in one pivotal study. In addition,
288 antibody persistence after primary vaccination and immunogenicity of a booster dose was
289 assessed in three studies in children (4 – 5 years of age), adolescents and adults (13 – 26 years of
290 age), and older adults (≥ 59 years of age).

291
292 Primary immunogenicity analyses were conducted by measuring serum bactericidal activity (SBA)
293 using human serum as the source of exogenous complement (hSBA). Rabbit complement (rSBA)
294 data are available in subsets in all age groups and generally follows the trends observed with
295 human complement (hSBA) data. In addition, all subjects were assessed for primary
296 immunogenicity measured by hSBA and rSBA for serogroup C in MEQ00065 study.

297
298 Clinical data on the persistence of antibody response ≥ 3 years after primary vaccination with
299 MenQuadfi in children (4 – 5 years of age), adolescents and adults (13 – 26 years of age), and
300 older adults (≥ 59 years of age) are available. Clinical data on booster vaccination with MenQuadfi
301 in those subjects are also available.

302

303 **Immunogenicity in toddlers 12 to 23 month of age**

304 Immunogenicity in subjects 12 through 23 months of age was evaluated in three clinical studies
305 (MET51, MET57 and MEQ00065).

306 MET51 was conducted in subjects who were either meningococcal vaccine naïve or had been
307 primed with monovalent meningococcal C conjugate vaccines in their first year of life.

308

309 *Response in subjects previously vaccinated with MenC conjugate vaccines in their first year of life:*

310 The majority of monovalent meningococcal C conjugate vaccine primed toddlers (12 through

311 23 months of age) in study MET51 had hSBA titres $\geq 1:8$ in the MenQuadfi group (N=198) ($\geq 86,7$
312 %) and in MenACWY-TT group (N=99) ($\geq 85,7$ %) at D30 post-vaccination. These toddlers
313 received during their infancy MenC-TT or MenC-CRM vaccines. Post-vaccination seroprotection
314 rates were comparable between MenQuadfi and MenACWY-TT for all serogroups regardless of
315 the priming background.

316

317 In MenC-CRM primed subjects the GMTs for serogroup A were lower in the MenQuadfi group
318 (n=49) than in the MenACWY-TT group (n=25) [12,0 (8,23; 17,5) vs 42,2 (25,9; 68,8)]. After
319 administration of MenQuadfi seroprotection rates (hSBA titres $\geq 1:8$) for subjects primed with
320 MenC- CRM were lower but still comparable for serogroups A and W compared with those in the
321 MenACWY-TT group [A: 68 % (53,7; 81,3) vs 96,0 % (79,6; 99,9)]; W: 68,1 % (52,9; 80,9) vs
322 79,2 % (57,8; 92,9)]. The rates for serogroup Y were higher but still comparable with those in the
323 MenACWY-TT group [95,8 % (85,7; 99,5) vs 80,0 % (59,3; 93,2)]. The rates for serogroup C were
324 comparable in both groups [95,7 % (85,5; 99,5) vs 92,0 % (74,0; 99,0)]. The clinical relevance of
325 these results is unknown. This aspect might/ be considered for individuals at high risk for MenA
326 infection who received MenC-CRM vaccine in their first year of life.

327

328 MET57 was conducted in meningococcal vaccine naïve toddlers 12 through 23 months of age to
329 assess the immunogenicity and safety of the concomitant administration of MenQuadfi with
330 paediatric vaccines (MMR+V, DTaP-IPV-HB-Hib or PCV-13). Overall, the post-vaccination hSBA
331 seroprotection rates in subjects who received MenQuadfi was high for all serogroups (between
332 88,9 % and 100 %). Seroresponse and seroprotection rates for serogroup A were comparable
333 when MenQuadfi was co-administered with PCV-13 and alone (56,1 %, [95 % CI 48,9; 63,2] and
334 83,7 % [95 % CI 77,7; 88,6] vs 71,9 % [95 % CI 61,8; 80,6] and 90,6 % [95 % CI 82,9; 95,6]).
335 There were differences in the hSBA GMTs for serogroup A when MenQuadfi was co-administered
336 with PCV-13 (n=196) compared with MenQuadfi administered alone (n=96) (24,6 [95 % CI 20,2;
337 30,1] and 49,0 [95 % CI 36,8; 65,3]). The clinical relevance of these results is unknown, but this
338 observation might be taken into consideration for individuals at high risk for MenA infection and
339 consequently vaccinations with MenQuadfi and PCV13 might be performed separately.

340

341 MEQ00065 study was conducted in meningococcal vaccine naïve toddlers 12 through 23 months
342 of age to assess the immunogenicity of serogroup C using hSBA and rSBA assays following
343 administration of a single dose of MenQuadfi compared to MenACWY-TT or to MenC-TT.

344

345 Superiority of MenQuadfi was demonstrated in comparison to MenACWY-TT vaccine for the hSBA
346 seroprotection rate and hSBA and rSBA GMTs to meningococcal serogroup C. Non-inferiority was
347 demonstrated for the rSBA seroprotection rate to meningococcal serogroup C.

348

349 Superiority of MenQuadfi was also demonstrated in comparison to MenC-TT vaccine for the rSBA
350 and hSBA GMTs to meningococcal serogroup C and non-inferiority was demonstrated for the rSBA
351 and hSBA seroprotection rates to meningococcal serogroup C.

352

353 **Immunogenicity in children 2 through 9 years of age**

354 Immunogenicity in subjects 2 through 9 years of age was evaluated in study MET35 (stratified by
355 ages 2 through 5 and 6 through 9 years) comparing seroresponses following administration of
356 either MenQuadfi or MenACWY-CRM.

357 Overall, for subjects 2 through 9 years of age, immune non-inferiority, based on hSBA
358 seroresponse, was demonstrated for MenQuadfi as compared to MenACWY-CRM for all four
359 serogroups.

360

361 **Immunogenicity in children and adolescents 10 through 17 years of age**

362 Immunogenicity in subjects aged 10 through 17 years of age was evaluated in two studies
363 comparing seroresponses following administration of MenQuadfi compared to either MenACWY-
364 CRM (MET50 or MenACWY-DT (MET43).

365 MET50 was conducted in meningococcal vaccine naïve subjects and seroresponse was evaluated
366 following administration with either MenQuadfi alone, MenACWY-CRM alone, MenQuadfi co-
367 administered with Tdap and HPV or Tdap and HPV alone.

368 Study MET43 was performed to evaluate the immunogenicity of MenQuadfi compared to

369 MenACWY-DT in children, adolescents and adults (10 through 55 years of age).

370

371 **Immunogenicity in adults 18 through 55 years of age**

372 Immunogenicity in subjects from 18 through 55 years of age was evaluated in study MET43
373 comparing MenQuadfi to MenACWY-DT.

374

375 **Immunogenicity in adults 56 years of age and older**

376 Immunogenicity in adults ≥ 56 years of age (mean 67,1 years, range 56,0 – 97,2 years) was
377 assessed in study MET49 comparing the immunogenicity of MenQuadfi to MenACWY
378 polysaccharide vaccine.

379

380 **Persistence of immune response and MenQuadfi booster response**

381 Antibody persistence after primary vaccination and immunogenicity of a MenQuadfi booster dose
382 was assessed in three studies in children (4 – 5 years of age), adolescents and adults (13 – 26
383 years of age), and older adults (≥ 59 years of age).

384

385 **Persistence of immune response and MenQuadfi booster response in children 4 through 5**
386 **years of age**

387 MET62 evaluated the antibody persistence of a primary dose, immunogenicity and safety of a
388 booster dose of MenQuadfi in children 4 through 5 years of age. These children were primed with a
389 single dose of MenQuadfi or MenACWY-TT 3 years before as part of the phase II study MET54
390 when they were 12 through 23 months old. The antibody persistence prior to the MenQuadfi
391 booster dose and the booster immune response were assessed according to the vaccine
392 (MenQuadfi or MenACWY-TT) children had received 3 years ago.

393

394 For all serogroups, hSBA GMTs were higher at D30 post-primary dose than at D0 pre-booster
395 dose for MenQuadfi or MenACWY-TT. The pre-booster GMTs were higher than the pre-primary
396 dose, indicative of long-term persistence of immune response.

397

398 After the booster dose, seroprotection rates were nearly 100 % for all serogroups in children
399 primed with MenQuadfi.

400

401 **Persistence of immune response and MenQuadfi booster response in adolescents and**
402 **adults 13 through 26 years of age**

403 MET59 evaluated the antibody persistence of primary dose, immunogenicity and safety of a
404 booster dose of MenQuadfi in adolescents and adults 13 through 26 years of age who had
405 received a single dose of MenQuadfi in study MET50 or MET43 or MenACWY-CRM in study
406 MET50 or outside of Sanofi Pasteur trials 3 – 6 years prior. The antibody persistence prior to the
407 MenQuadfi booster dose and the booster immune response were assessed according to the
408 vaccine (MenQuadfi or MenACWY-CRM) subjects had received 3 – 6 years previously.

409

410 For all serogroups, hSBA GMTs were higher at D30 post-primary dose than at D0 pre-booster for
411 MenQuadfi and MenACWY-CRM primed subjects. The pre-booster GMTs were higher than the
412 pre-primary dose, indicative of long-term persistence of immune response.

413

414 After the booster dose, seroprotection rates were nearly 100 % for all serogroups in adolescents
415 and adults primed with MenQuadfi.

416

417 **Persistence of immune response and MenQuadfi booster response in adults 59 years of age**
418 **and older**

419 MEQ00066 evaluated the antibody persistence of primary dose, immunogenicity, and safety of a
420 booster dose of MenQuadfi in adults ≥ 59 years of age who had received a single dose of
421 MenQuadfi or MenACWY-PS ≥ 3 years previously in study MET49 or MET44.

422

423 *3 year persistence*

424 The antibody persistence prior to the MenQuadfi booster dose and the booster immune response
425 were assessed according to the vaccine (MenQuadfi or MenACWY-PS) subjects had received
426 3 years previously in MET49.

427

428 For all serogroups, hSBA GMTs were higher at D30 post-primary dose than at D0 pre-booster
429 dose for both MenQuadfi-primed and MenACWY-PS-primed adults. In addition, for both primed
430 groups, the pre-booster GMTs were higher than the pre-primary dose for serogroups C, W and Y
431 (indicative of long-term persistence of immune response for these serogroups) and were
432 comparable for serogroup A.

433

434 *6 – 7 year persistence*

435 The antibody persistence was assessed according to the vaccine (MenQuadfi or MenACWY-PS)
436 subjects had received 6 – 7 years previously in study MET44.

437

438 For all serogroups, hSBA GMTs were higher at D30 post-primary dose than at D0 pre-booster
439 dose for MenQuadfi-primed adults. The pre-booster GMTs were higher than the pre-primary dose
440 for serogroup C, W, and Y in MenQuadfi-primed adults, indicative of long-term persistence of
441 immune response for these serogroups, and were comparable for serogroup A.

442

443 **Booster response in adolescents and adults at least 15 years of age primed with other** 444 **MenACWY vaccines**

445 Study MET56 compared the immunogenicity of a booster dose of MenQuadfi with a booster dose
446 of MenACWY-DT in subjects at least 15 years of age. These subjects were primed with a
447 quadrivalent meningococcal conjugate vaccine (MenACWY-CRM (11,3 %) or with MenACWY-DT
448 (86,3 %)) 4 to 10 years earlier.

449 At baseline, hSBA seroprotection and GMT were similar for serogroups A, C, W, and Y.

450

451 **5.2 Pharmacokinetic properties**

452 No pharmacokinetic studies have been performed.

453

454 **5.3 Preclinical safety data**

455 Non-clinical safety data revealed no special risks for humans based on a developmental and

456 reproductive toxicity study in female rabbits.

457 The administration of MenQuadfi to female rabbits at a full human dose showed no effects on
458 mating performance, female fertility, no teratogenic potential, and no effect on pre- or post-natal
459 development.

460

461 **6. PHARMACEUTICAL PARTICULARS**

462 **6.1 List of excipients**

463 Sodium chloride

464 Sodium acetate

465 Water for injections

466

467 **6.2 Incompatibilities**

468 In the absence of compatibility studies, this medicinal product must not be mixed with other
469 medicinal products.

470

471 **6.3 Shelf life**

472 48 months

473

474 **6.4 Special precautions for storage**

475 Store in a refrigerator (2 °C – 8 °C).

476 Do not freeze.

477 KEEP OUT OF REACH OF CHILDREN

478

479 **6.5 Nature and contents of container**

480 Solution in a Type I borosilicate clear glass vial with a 13 mm gray chlorobutyl stopper and a flip off
481 seal.

482 Pack of 1 or 5 single dose (0,5 mL) vials.

483 Not all pack sizes may be marketed.

484

485 **6.6 Special precautions for disposal and other handling**

486 The vaccine should be inspected visually for any particulate matter and/or variation of physical
487 aspect (or discolouration) prior to administration. In the event of either being observed, discard the
488 vaccine.

489

490 *Preparation*

491 Remove the flip off seal and using a suitable syringe and needle, withdraw 0,5 mL of solution,
492 ensuring no air bubbles are present before injection.

493

494 Any unused medicinal product or waste material should be disposed of in accordance with local
495 requirements.

496

497 **7. HOLDER OF CERTIFICATE OF REGISTRATION**

498 sanofi-aventis south africa (pty) ltd
499 Hertford Office Park, Building I, 5th Floor
500 90 Bekker Road, Vorna Valley
501 Midrand 2196

502

503 **8. REGISTRATION NUMBER**

504 55/30.2/0612

505

506 **9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

507 19 September 2023

508

509 **10. DATE OF REVISION OF THE TEXT**

510 To be allocated