



NORWAY

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(54)	Title	RESPIRATORY VIRUS VACCINES
(56)	References Cited:	WO-A1-2012/031043, WO-A1-2013/090648, WO-A1-2013/185069, WO-A1-2014/089486, WO-A1-2014/144196, WO-A1-2015/095340, WO-A2-2012/006369, WO-A2-2005/027963 DU L ET AL: "Recombinant adeno-associated virus expressing the receptor-binding domain of severe acute respiratory syndrome coronavirus S protein elicits neutralizing antibodies: Implication for developing SARS vaccines", VIROLOGY, ELSEVIER, AMSTERDAM, NL, vol. 353, no. 1, 15 September 2006 (2006-09-15), pages 6-16, XP024896372, ISSN: 0042-6822, DOI: 10.1016/J.VIROL.2006.03.049 [retrieved on 2006-09-15], SHIM BYOUNG-SHIK ET AL: "Intranasal immunization with plasmid DNA encoding spike protein of SARS coronavirus/polyethylenimine nanoparticles elicits antigen-specific humoral and cellular immune responses", BMC IMMUNOLOGY, BIOMED CENTRAL, LONDON, GB, vol. 11, no. 1, 31 December 2010 (2010-12-31), page 65, XP021086526, ISSN: 1471-2172, DOI: 10.1186/1471-2172-11-65, FREDERIC MARTINON ET AL: "Induction of virus-specific cytotoxic T lymphocytes in vivo by liposome-entrapped mRNA", EUR. J. IMMUNOL, vol. 23, 1 January 1993 (1993-01-01), pages 1719-1722, XP055337978,

Enclosed is a translation of the patent claims in Norwegian. Please note that as per the Norwegian Patents Acts, section 66i the patent will receive protection in Norway only as far as there is agreement between the translation and the language of the application/patent granted at the EPO. In matters concerning the validity of the patent, language of the application/patent granted at the EPO will be used as the basis for the decision. The patent documents published by the EPO are available through Espacenet (<http://worldwide.espacenet.com>) or via the search engine on our website here: <https://search.patentstyret.no/>

Patentkrav

1. Betakoronavirus (BetaCoV) messenger RNA (mRNA)-vaksine omfattende minst ett mRNA polynukleotid som har en åpen leseramme som koder for minst ett BetaCoV antigen polypeptid;

hvor det minst ene BetaCoV antigene polypeptidet er (a) et spike (S)-protein eller immunogent fragment derav, eller (b) en S1-underenhet eller en S2- underenhet av S-protein eller et immunogent fragment derav;

hvor BetaCoV-vaksinen er formulert i en lipidnanopartikkel, hvor lipidnanopartikkelen omfatter 40-60 % kationisk lipid, 5-15 % ikke-kationisk lipid, 1-2 % PEG-lipid og 30-50 % kolesterol.

2. Vaksinen ifølge krav 1, hvor den åpne leserammen koder for et S-protein.

3. Vaksinen ifølge krav 1, hvor den åpne leserammen koder for en S1-underenhet eller en S2-underenhet av S-protein.

4. Vaksinen ifølge hvilket som helst av kravene 1-3, hvor BetaCoV er MERS-CoV, SARS-CoV, HCoVOC43, HCoV-229E, HCoV-NL63 eller HCoV-HKU1.

5. Vaksinen ifølge hvilket som helst av kravene 1-4, hvor det minst ene mRNA-polynukleotidet omfatter en 5' utranslatert region (UTR), en 3' UTR, en 5'-hette og en poly(A)-hale.

6. Vaksinen ifølge krav 5, hvor 5'-hetten er en 5'-terminalhette 7mG(5')ppp(5')N1mpNp.

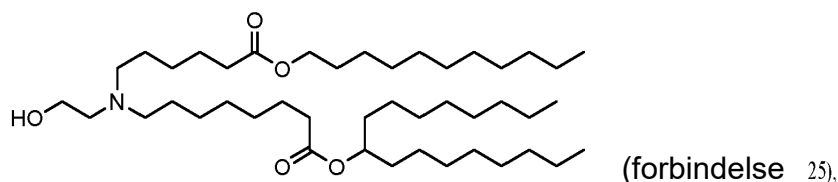
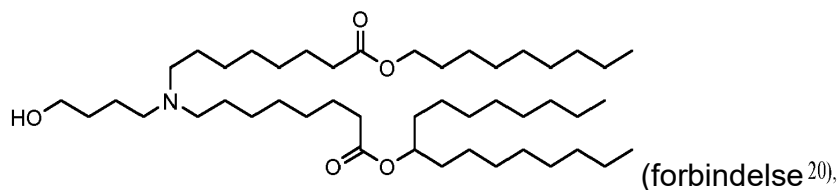
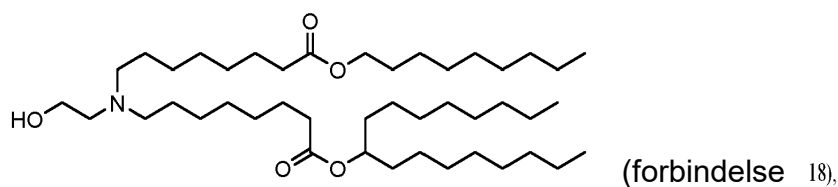
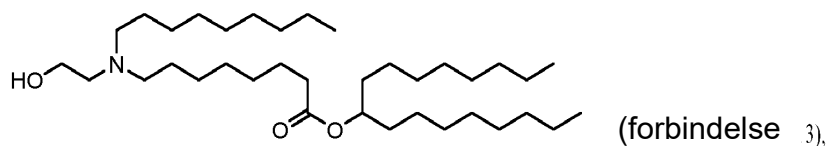
7. Vaksinen ifølge hvilket som helst av kravene 1-6, hvor det minst ene mRNA-polynukleotidet omfatter minst en kjemisk modifikasjon; eventuelt hvor det minst ene kjemiske modifikasjonen er en N1-metylpsedouridin-modifikasjon eller en N1-etylpsedouridin-modifikasjon.

8. Vaksinen ifølge krav 7, hvori minst 80 % av uracilen i den åpne leserammen har en kjemisk modifikasjon.

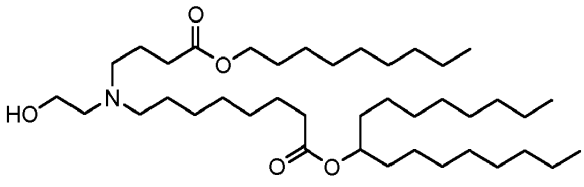
9. Vaksinen ifølge krav 1-8, hvori det kationiske lipidet er et ioniserbart kationisk lipid, det ikke-kationiske lipidet er et nøytralt lipid.

10. Vaksinen ifølge krav 9, hvori det nøytrale lipidet velges fra DSPC, DPPC, POPC, DOPE og SM.

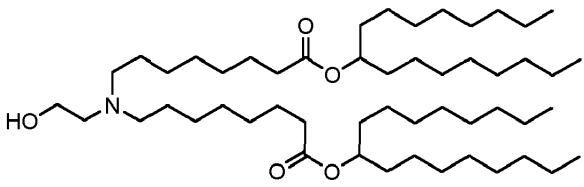
11. Vaksinen ifølge hvilket som helst av kravene 1-10, hvori lipidnanopartikkelen omfatter en forbindelse av forbindelse 3, 18, 20, 25, 26, 29, 30, 60, 108-112 eller 122:



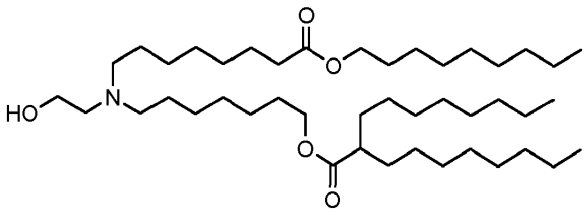
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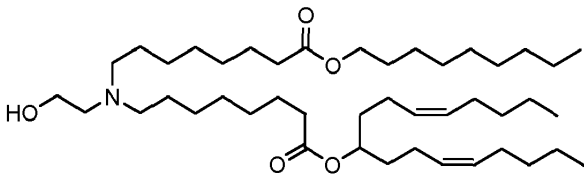
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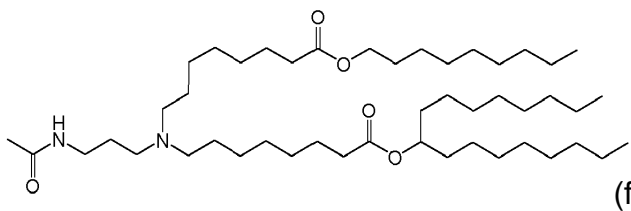
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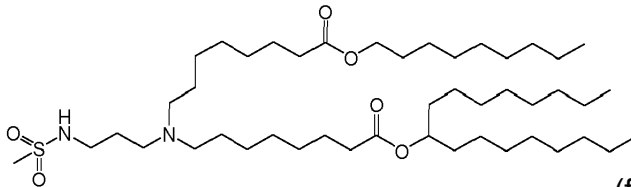
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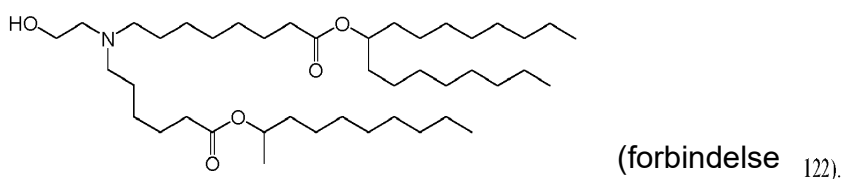
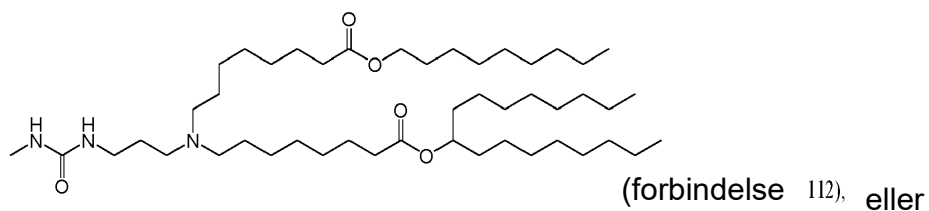
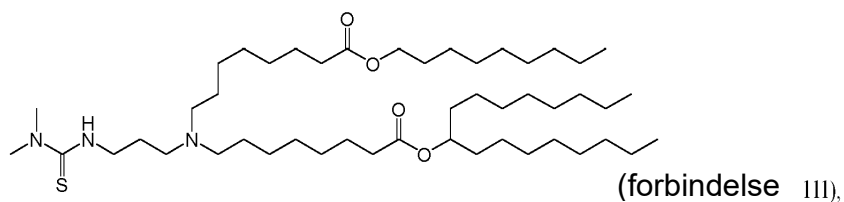
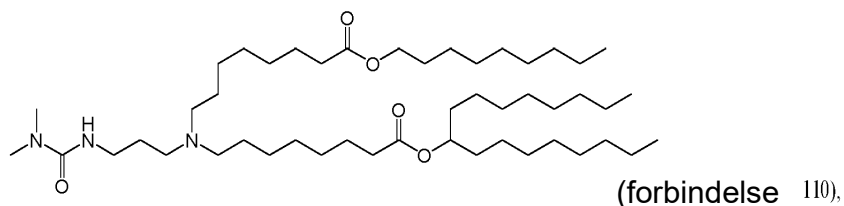
(forbindelse 60),



(forbindelse 108),



(forbindelse 109),



12. Vaksinen ifølge hvilket som helst av kravene 1-11, for anvendelse i en fremgangsmåte for å forebygge og/eller behandling av en BetaCoV-sykdom hos et individ.

13. Vaksinen for anvendelse ifølge krav 12, hvori vaksinen administreres til individet ved intradermal eller intramuskulær injeksjon.