*Supplementary Data*

# A Novel Gene Delivery Vector of Agonistic Anti-Radioprotective 105 Expressed on Cell Membranes Shows Adjuvant Effect for DNA Immunization Against Influenza

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**Supplementary Data|**

We indicate amino acid sequences of αRP105-TM (F2A), Isotype-2-TM (F2A), and HA (A/PR8). The signal sequence was determined by SignalP-5.0 Server (http://www.cbs.dtu.dk/services/SignalP/). The variable region, constant region, and trans membrane part were determined by ImMunoGeneTics (IMGT, http://www.imgt.org/).

**Amino acid sequence of αRP105-TM (F2A)**

METDRLLLWVLLLWVPGSTGDTVLTQSPTLAVSPGERVSISCRASEGVNSYMHWYLQRPG  60

QQPKLLIYKASNLASGVPARFSGSGSGTDFTLTIDPVEADDTATYFCQQSWNDPRTFGGG  120

TKLELKRADAAPTVSIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWKIDGSERQNGVLN  180

SWTDQDSKDSTYSMSSTLTLTKDEYERHNSYTCEATHKTSTSPIVKSFNRNECRAKRAPV  240

KQTLNFDLLKLAGDVESNPGPRGRMELGLFFLLSVTAEVHSQVQLQQSGAELAKPGSSVK  300

ISCKASGYTFTTDYISWIKQTTGQGLEYIGYIITAGGGTNYNEKFKGKATLTVDKSSSTA  360

FMQLSSLTPDDSAVYYCARGRIRTLDFDYWGQGVMVTVSSAETTAKTTPPSVYPLAPGSA  420

AQTNSMVTLGCLVKGYFPEPVTVTWNSGSLSSGVHTFPAVLQSDLYTLSSSVTVPSSTWP  480

SETVTCNVAHPASSTKVDKKIVPRDCGCKPCICTVPEVSSVFIFPPKPKDVLTITLTPKV  540

TCVVVDISKDDPEVQFSWFVDDVEVHTAQTQPREEQFNSTFRSVSELPIMHQDWLNGKEF  600

KCRVNSAAFPAPIEKTISKTKGRPKAPQVYTIPPPKEQMAKDKVSLTCMITDFFPEDITV  660

EWQWNGQPAENYKNTQPIMDTDGSYFVYSKLNVQKSNWEAGNTFTCSVLHEGLHNHHTEK  720

SLSHSPLQLDETCAEAQDGELDGLWTTITIFISLFLLSVCYSAAVTLFKVKWIFSSVVEL  780

KQTLVPEYKNMIGQAP*


Dotted line: Signal sequence

Double line (Blue): Variable region (V_L), Bold line (Blue): Constant region (mkappa)

Double line (Green): Variable region (V_H), Bold line (Green): Constant region (mIgG1)

Shaded characters: F2A sequence

Enclosed character: Trans membrane part

*: Stop codon

**Amino acid sequence of Isotype-2-TM (F2A)**

MVLMLLLLWVSGTCGDIVMSQSPSSLAVSVGEKVTMSCKSSQSLLFGSNQKNSLAWYQQK  60

PGQSPKLLIYWASTRESGVPDRFTGSGSGTDFTLTISSVKAEDLAVYYCQQYYSYPYTFG 120

GVTKLEIKRADAAPTVSIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWKIDGSERQNGV 180

LNSWTDQDSKDSTYSMSSTLTLTKDEYERHNSYTCEATHKTSTSPIVKSFNRNECRAKRA 240

PVKQTLNFDLLKLAGDVESNPGPRGRMAVLGLFLCLVTFPSCVLSQVQLKQSGPGLVQPS 300

QSLSITCTVSGFSLTSYGIHWVRQSPGKGLEWLGVIWTGGNTVYNAAFISRLSITKDNSK 360

SQVFFKMNSLQATDTAFYYCARNWDYGYDWFAYWGQGTLVTVSAKTTPPSVYPLAPGSAA 420

QTNSMVTLGCLVKGYFPEPVTVTWNSGSLSSGVHTFPAVLQSDLYTLSSSVTVPSSTWPS 480

ETVTCNVAHPASSTKVDKKIVPRDCGCKPCICTVPEVSSVFIFPPKPKDVLTITLTPKVT 540

CVVVDISKDDPEVQFSWFVDDVEVHTAQTQPREEQFNSTFRSVSELPIMHQDWLNGKEFK 600

CRVNSAAFPAPIEKTISKTKGRPKAPQVYTIPPPKEQMAKDKVSLTCMITDFFPEDITVE 660

WQWNGQPAENYKNTQPIMDTDGSYFVYSKLNVQKSNWEAGNTFTCSVLHEGLHNHHTEKS 720

LSHSPLQLDETCAEAQDGELDGLWTTITIFISLFLLSVCYSAAVTLFKVKWIFSSVVELK 780

QTLVPEYKNMIGQAP*


Dotted line: Signal sequence

Double line (Blue): Variable region ($V_L$), Bold line (Blue): Constant region (mkappa)

Double line (Green): Variable region ($V_H$), Bold line (Green): Constant region (mIgG1)

Shaded characters: F2A sequence

Enclosed character: Trans membrane part

*: Stop codon

**Amino acid sequence of HA (A/PR8)**

MKANLLVLLCALAAADADTICIGYHANNSTDTVDTVLEKNVTVTHSVNLLEDSHNGKLCR   60

LKGITPLQLGNCNIAGWLLGNPECDPLLPVRSWSYIVETPNSENGICYPGDFIDYEELRE  120

QLSSVSSFERFEIFPKESSWPNHNTNKGVTAACSHAGKSSFYRNLLWLTEKEGSYPKLKN  180

SYVNKKGKEVLVLWGIHHPSNSKEQQNLYQNENAYVSVVTSNYNRRFTPEIAERPKVKDQ  240

AGRMNYYWTLLKPGDTIIFEANGNLIAPRYAFALSRGFGSGIITSNASMHECNTKCQTPL  300

GAINSSLPFQNIHPVTIGECPKYVRSAKLRMVTGLRNIPSIQSRGLFGAIAGFIEGGWTG  360

MIDGWYGYHHQNEQGSGYAADQKSTQNAINGITNKVNSVIEKMNTQFTAVGKEFNKLEKR  420

MENLNKKVDDGFLDIWTYNAELLVLLENERTLDFHDSNVKNLYEKVKSQLKNNAKEIGNG  480

CFEFYHKCDNECMESVRNGTYDYPKYSEESKLNREKVDGVKLESMGIYQILAIYSTVASS  540

LVLLVSLGAISFWMCSNGSLQCRICI*

Dotted line: Signal sequence

*: Stop codon