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# Product datasheet for KN221382LP

## Nicotinic Acetylcholine Receptor alpha 7 (CHRNA7) Human Gene Knockout Kit (CRISPR)

### Product data:

| | |
|---|---|
| **Product Type:** | Knockout Kits (CRISPR) |
| **Format:** | 2 gRNA vectors, 1 Luciferase-Puro donor, 1 scramble control |
| **Donor DNA:** | Luciferase-Puro |
| **Symbol:** | Nicotinic Acetylcholine Receptor alpha 7 |
| **Locus ID:** | 1139 |
| **Components:** | **KN221382G1**, Nicotinic Acetylcholine Receptor alpha 7 gRNA vector 1 in pCas-Guide CRISPR vector (GE100002)<br>**KN221382G2**, Nicotinic Acetylcholine Receptor alpha 7 gRNA vector 2 in pCas-Guide CRISPR vector (GE100002)<br>**KN221382LPD**, donor DNA containing left and right homologous arms and Luciferase-Puro functional cassette.<br>**GE100003**, scramble sequence in pCas-Guide vector |
| **Disclaimer:** | These products are manufactured and supplied by OriGene under license from ERS. The kit is designed based on the best knowledge of CRISPR technology. The system has been functionally validated for knocking-in the cassette downstream the native promoter. The efficiency of the knock-out varies due to the nature of the biology and the complexity of the experimental process. |
| **RefSeq:** | NM_000746, NM_001190455, NR_046324, N54079 |
| **UniProt ID:** | P36544 |
| **Synonyms:** | CHRNA7-2; NACHRA7 |

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**Summary:** The nicotinic acetylcholine receptors (nAChRs) are members of a superfamily of ligand-gated ion channels that mediate fast signal transmission at synapses. The nAChRs are thought to be hetero-pentamers composed of homologous subunits. The proposed structure for each subunit is a conserved N-terminal extracellular domain followed by three conserved transmembrane domains, a variable cytoplasmic loop, a fourth conserved transmembrane domain, and a short C-terminal extracellular region. The protein encoded by this gene forms a homo-oligomeric channel, displays marked permeability to calcium ions and is a major component of brain nicotinic receptors that are blocked by, and highly sensitive to, alpha-bungarotoxin. Once this receptor binds acetylcholine, it undergoes an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma membrane. This gene is located in a region identified as a major susceptibility locus for juvenile myoclonic epilepsy and a chromosomal location involved in the genetic transmission of schizophrenia. An evolutionarily recent partial duplication event in this region results in a hybrid containing sequence from this gene and a novel FAM7A gene. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Feb 2012]

## Product images: