# The development of therapeutics for CADASIL patients

**Market sectors**: **CNS, CADASIL,** Research, Gene therapy.

## Scientists at Leiden University Medical Center (LUMC) developed a potential method for the therapeutic intervention in patients suffering from Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL).

CADASIL is a condition causing ischemic brain lesions, which gradually leads to cognitive decline and eventually to dementia. Currently, there is no treatment.

The disease is caused by characteristic mutations in the NOTCH3 gene resulting in an unequal number of cysteine residues and misfolding of the NOTCH3 protein.

NOTCH3 is exclusively expressed in vascular smooth muscle cells (VSMC) and this misfolding leads to an accumulation of the extracellular domain of the NOTCH3 protein and granular osmiophilic material on the surface of degenerating VSMC. In turn, this leads to impaired vascular reactivity and decreased cerebral blood flow.

Scientists at the Leiden University Medical Center have succeeded in re-establishing an equal number of cysteine residues in the NOTCH3 protein by the exclusion of specific exons from the mRNA. They demonstrated that this reduces or even delays the accumulation of NOTCH3 on the surface of VSMC. This novel finding could lead to the development of therapeutic strategies for CADASIL patients.

Partner companies are now sought for research collaborations in this field, and licensing of key technologies. Specifically we are looking for companies with a a franchise in the treatment of CNS-ischaemic diseases.

### Key benefits

- Novel therapeutic strategy
- Unmet need
- Benefits related to orphan disease status
- New insights for other autosomal dominant diseases

### Applications

- CADASIL treatment
- CADASIL research

### Development stage

- Further information available upon request

### Patent status

- In national phase

### Data available on request

- Publications
- Non-confidential presentations
- Confidential presentations

### Further information

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