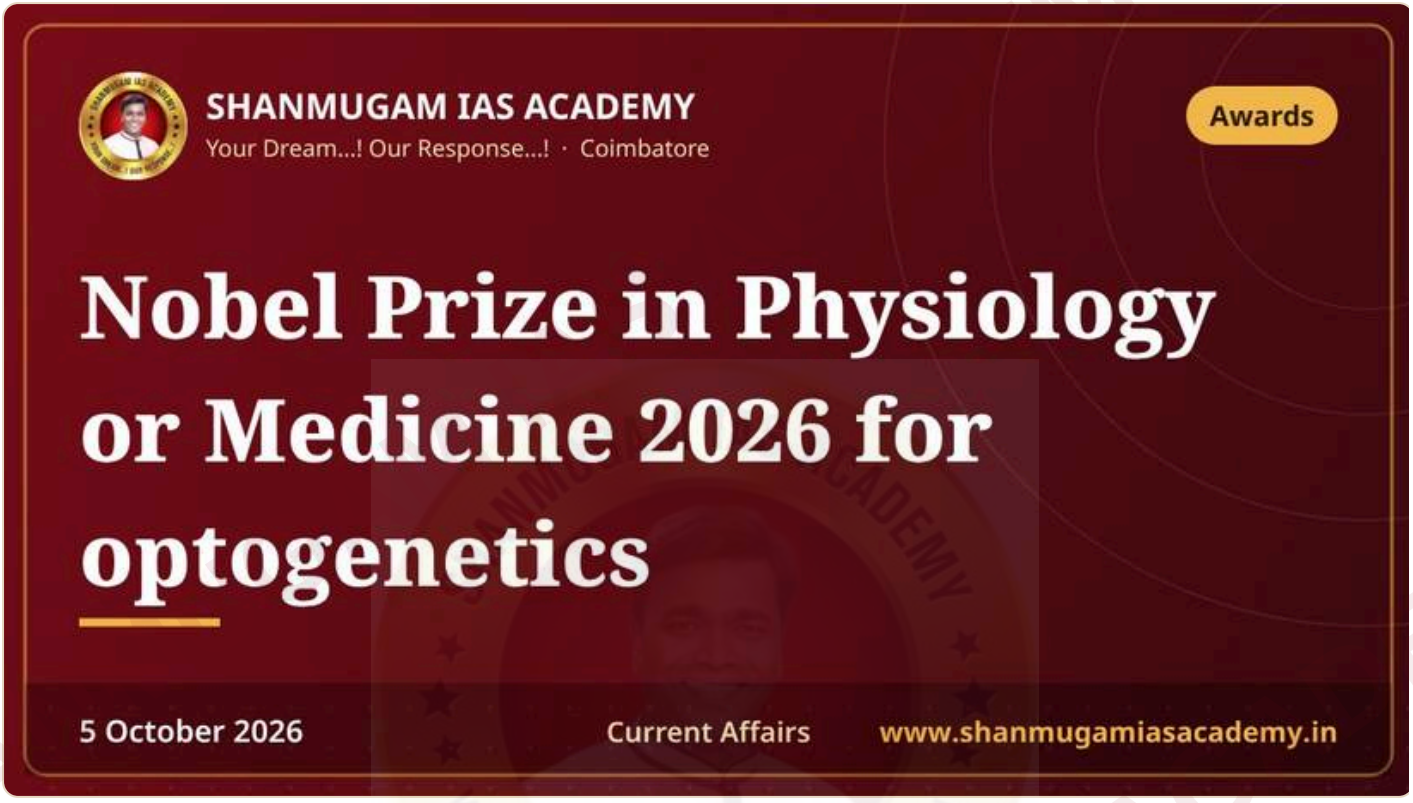
Nobel Prize in Physiology or Medicine 2026 for optogenetics

Awards · 5 October 2026 · https://www.shanmugamiasacademy.in/current-affairs-english/2026/10/05



News

On **5 October 2026** the **Nobel Assembly at Karolinska Institutet**, Stockholm, awarded the **2026 Nobel Prize in Physiology or Medicine** jointly to **Karl Deisseroth**, **Peter Hegemann** and **Georg Nagel "for their discoveries concerning light-gated ion channels and optogenetics"**.

Key facts

Karl Deisseroth (54)	USA
Peter Hegemann (71)	Germany
Georg Nagel (73)	Germany

Background

- The Medicine prize is chosen by the **Nobel Assembly at Karolinska Institutet**; Physics and Chemistry by the **Royal Swedish Academy of Sciences**; Peace by the **Norwegian Nobel Committee (Oslo)**. Prizes are given on **10 December**, Alfred Nobel's death anniversary. The prize is reported as **SEK 12 million** this year.
- First Medicine Nobel (1901): **Emil von Behring** (diphtheria antitoxin).
- **Har Gobind Khorana** (born in Raipur, Punjab, British India) shared the **1968** Medicine prize for the **genetic code**. **Ronald Ross**, born at **Almora** (India), won in **1902** for work on **malaria**.

- **2025:** Mary Brunkow, Fred Ramsdell, Shimon Sakaguchi (peripheral immune tolerance). **2024:** Victor Ambros, Gary Ruvkun (microRNA). **2023:** Katalin Karikó, Drew Weissman (mRNA vaccines).

The science: Hegemann and Nagel found **channelrhodopsin**, a protein in the green alga ***Chlamydomonas reinhardtii*** that opens an ion channel when light falls on it, helping the alga swim towards light. **Deisseroth** put this gene into nerve cells; in **2005** he showed that pulses of **blue light** could switch neurons on within milliseconds. This method, **optogenetics** (light + genetics), lets scientists turn chosen brain cells on or off to study memory, depression, Parkinson's disease and vision.

Tamil Nadu link: Nobel laureates with Tamil Nadu roots: **C.V. Raman** (Physics 1930, born **Tiruchirappalli**), **S. Chandrasekhar** (Physics 1983) and **Venkatraman Ramakrishnan** (Chemistry 2009, born **Chidambaram**). Ronald Ross worked for a time at **Ooty** (Nilgiris) before his 1897 malaria discovery at **Secunderabad**.

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