**The wavelength positions of the half-maximal amplitude of the long-wavelength slope of the spectrum (λ50) of ChR variants tested in this study**

|  |  |
| --- | --- |
| **ChR variant** | **λ50 (nm)** |
| ***Gt*ACR1** | 560 |
| ***Gt*ACR1\_S97F** | 574 |
| ***Gt*ACR1\_C133M** | 568 |
| ***Gt*ACR1\_C237A** | 571 |
| ***Hf*ACR1** | 655 |
| ***Hf*ACR1\_F104S** | 629 |
| ***Hf*ACR1\_M143C** | 644 |
| ***Hf*ACR1\_M143V** | 637 |
| ***Hf*ACR1\_A242C** | 646 |
| ***Ans*ACR** | 494 |
| ***Ans*ACR\_T90S** | 494 |
| ***Ans*ACR\_T90S\_D226E** | 506 |
| ***Ans*ACR\_M134A** | 495 |
| ***Ans*ACR\_M134G** | 496 |
| ***Ans*ACR\_M134V** | 502 |
| ***Ans*ACR\_D226E** | 506 |
| ***Ans*ACR\_A229C** | 496 |
| ***Ans*ACR\_A229S** | 496 |
| ***Ft*ACR** | 507 |
| ***Ft*ACR\_L96Q** | 489 |
| ***Ft*ACR\_M140G\_V144A** | 508 |
| ***Ft*ACR\_A235C** | 510 |
| ***Ft*ACR\_A235S** | 508 |
| ***Nl*CCR** | 482 |
| ***Nl*CCR\_F85S** | 487 |
| ***Nl*CCR\_S89T** | 485 |
| ***Nl*CCR\_M93Q** | 476 |
| ***Nl*CCR\_M141A** | 483 |
| ***Nl*CCR\_M141C** | 485 |
| ***Nl*CCR\_M141G** | 481 |
| ***Nl*CCR\_M141V** | 488 |
| ***Nl*CCR\_E233D** | 487 |
| ***Nl*CCR\_P235I** | 489 |
| ***Nl*CCR\_A236C** | 490 |