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AptaKan: An R package for the analysis of the data of fluorescent bioassays

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AptaKan is a contributed package to the statistical software R and has a in-built Shiny app based Graphical User Interface (GUI). It can be used to analyse data of gold nanoparticles and ampicillin aptamer-based assays. The package is useful for: 1. Analysis of the data based on different statistical models; 2. Diagnostic plots of statistical models; 3. Computing the concentration from fluorescent data with the help of different statistical models; 4. Simulation of dissociation constant (Kd) based on sigmoidal and non-sigmoidal models; 5. Analysing the positivity (significance) of the assay statistically. Moreover, a report of results can be downloaded dynamically using the GUI, generated by applying R packages knitr and rmarkdown. Finally, our package provides a template on handling R's S4 classes in Shiny. The package can also be implemented on other experimental data too, by arranging the data in specific template.

Speaker Biography

Navneet Phogat has done Master's in Marine Biotechnology from Goa University, Goa, India. During this time, he was awarded fellowship for two years from Department of Biotechnology, Government of India. He has done Master's in Biomedical Engineering from Furtwangen University, Germany. Currently, he is pursuing his PhD from Tubingen University, Tubingen, Germany. His research interests are in image processing, machine learning, data science and artificial intelligence.

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