

Virtual bio-laboratories are programs for performing virtual experiments. They are based on the idea that mathematical and computer science methods can prove successful in biology and medicine, too. The applicability of this approach is gaining more and more recognition in the last years. Current virtual bio-laboratories are standalone programs, each aimed at simulating one tissue or one biological process. There is a growing need for a unifying interface that would allow to design laboratories that can interoperate with each other while being developed independently. In this work we design such an interface and implement a working prototype. The interface will make as few assumptions about the nature of particular bio-laboratories as possible. Diverse laboratories can then “talk” together through their common subset of supported interactions. This greatly enhances the code reusability between experiments — libraries of already developed laboratories and defined interactions are used to set up your experiment and you only implement the missing parts. We implement a couple of basic laboratories and interactions to prove the concept and to help the developers quickly start with their first virtual experiments.