Abstract

APPARATUS AND METHODS FOR CONTROLLING CELLULAR DEVELOPMENT

According to one aspect and example, a method for facilitating cellular interactions in biological tissue provides controllable activation of a selected type of stem cell among a plurality of cell types present in the tissue. The method includes various steps including the introduction of a microbial opsin into a region of the tissue that includes a selected type of stem cell, by expressing the microbial opsin in the stem cell. A light source is then introduced near the stem cell, and the light source is used to controllably activate thejight source to direct pulses of illumination from the light source to the selected type of stem cell, for selectively controlling the growth and development of the stem cell in a manner that is independent of the growth and development of the other types of cells.

Figure 1