Researchers at the University of South Florida have developed a novel method of modifying complex extracts or mixtures to obtain a complex composition with a tuned therapeutic effect.

The academic study of various botanicals for the treatment of diverse diseases has a significant history of biomedical interest. Botanicals that have been of interest for their potential therapeutic value include blueberry, bayberry, yarrow, green tea, hollyhock, golden rod, juniper, mandrake and others. Plant and other natural extracts have been examined for therapeutic benefit in cardiovascular disease, infectious disease, diabetes, and neurodegenerative disorders, as well as health enhancement qualities such as reduction of the risk of cancer and heart disease, protecting brain function, and increasing basal metabolism. There is a need for compositions derived from crude extracts which have been modulated and tuned for particular therapeutic effect by selective removal of certain components or component mixtures.

Our researchers have developed a method of modifying complex extracts in which components or mixtures of components are selectively removed or added, thus providing a complex mixture that does not naturally occur. The method involves a selective deletion chromatography technique to prepare a composition which has a refined therapeutic effect. The complex extract can be an extract obtained from one or more plants, e.g., an extract obtained from green tea leaves. This method can be used to prepare nutraceutical compositions, pharmaceutical compositions, and compositions for treating various conditions, including physiological dysfunctions associated with elevated reactive oxygen species and/or inflammatory molecule.

**ADVANTAGES:**
- Modifies complex extracts from plants
- Prepare pharmaceutical compositions
- Applicable to other complex mixtures

**Modifying Complex Extracts to Prepare Compositions With Therapeutic Effect**

![Graph showing Reactive oxygen species levels](image)

**Components from Green Tea Extract that Increase and Decrease Cellular ROS Levels and Should be Targeted with this Approach**

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