**Title**:

**Authors:**

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**Abstract**

The *Scutellaria* genus contains multiple plant species used extensively in traditional medicines due to their various anti-inflammatory, sedative, and neuroprotective effects. *S. baicalensis* is one of the most well-known of these species, and previous works have identified its accumulation of bioactive flavones as a primary source of these effects. Specifically, the biosynthetic pathway of *S. baicalensis* … root-specific accumulation of 4´-doexyflavones

**OUTLINE**

1. INTRODUCTION
   1. Background of medicinal plants
      1. Importance in traditional medicines
      2. Limitations – endangerment of native populations, production efficiency
      3. Necessity of biotechnology
   2. Introduction to *Scutellaria* and well-known *Scutellaria* species
      1. *S. barbata*, *S. lateriflora*, *S. baicalensis*
   3. 4´-hydroxyflavones and 4´-deoxyflavones
      1. Medicinal activities
      2. Organ-specific pattern in *S. baicalensis*
      3. Current state of knowledge of flavone pathway in *Scutellaria*
   4. Gaps in knowledge
      1. 470+ species in genus, only several studied
      2. Focus in *S. baicalensis* has been on 4´-deoxyflavones, not hydroxyflavones
   5. Goal of present study
      1. Identify medicinally valuable species that were previously unrecognized
      2. Assess how well organ-specific accumulation pattern is conserved
      3. Present a novel 4´-hydroxyflavone in *Scutellaria*, identify the enzyme responsible, and quantify it in various species
2. MATERIALS AND METHODS
3. RESULTS
4. DISCUSSION