

## BIOACTIVITY STUDIES OF LIGNANS FROM *HELIANTHUS ANNUUS*

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### INTRODUCTION

Lignans are secondary metabolites originated through shikimic acid pathway. They are widely distributed in the vegetable Kingdom.<sup>1</sup> They are formed by the union of two phenylpropane units and they constitute a complex family of skeletons and functionalizations.

### RESULTS AND DISCUSSION

Fresh leaves of *H. annuus* cv. Stella and SH-222 were extracted with water at room temperature for 24 h. This aqueous extracts were re-extracted with methylene chloride and ethyl acetate. The different fractions obtained were fractionated and assayed. The polar bioactive fractions yielded compounds **1-11** (Figure 1). The spectroscopic data of 1-6 and 8-11 were identical to those previously reported for pinoresinol (**1**),<sup>2</sup> siringaresinol (**2**),<sup>3</sup> medioresinol (**3**),<sup>3</sup> buddlenol E (**4**),<sup>4</sup> lariciresinol (**5**),<sup>5</sup> 7-hydroxylariciresinol (**6**),<sup>6</sup> neo-olivil (**8**),<sup>7</sup> dihydro-dehydrodicoumaril alcohol (**9**),<sup>8</sup> 1-(4'-hydroxy-3'-methoxyphenyl)-2-[4''-(3-hydroxypropyl)-2''-methoxyphenoxy]-propane-1,3-diol (**10**)<sup>9</sup> and 3-(4-hydroxy-3,5-dimethoxyphenyl)propan-1-ol (**11**).<sup>10</sup>

This is the first time that compound **7** has been isolated as aglycone natural product. The isolated compounds were bioassayed (Figure 2) and Structure-Activity Relationship (SAR) study has been performed.

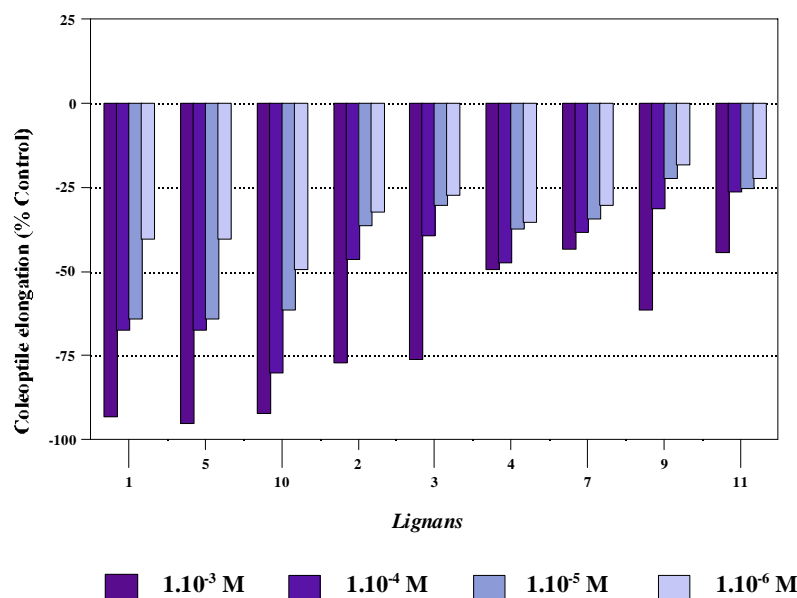


Figure 2. Bioactivities of compounds in wheat coleoptile bioassay

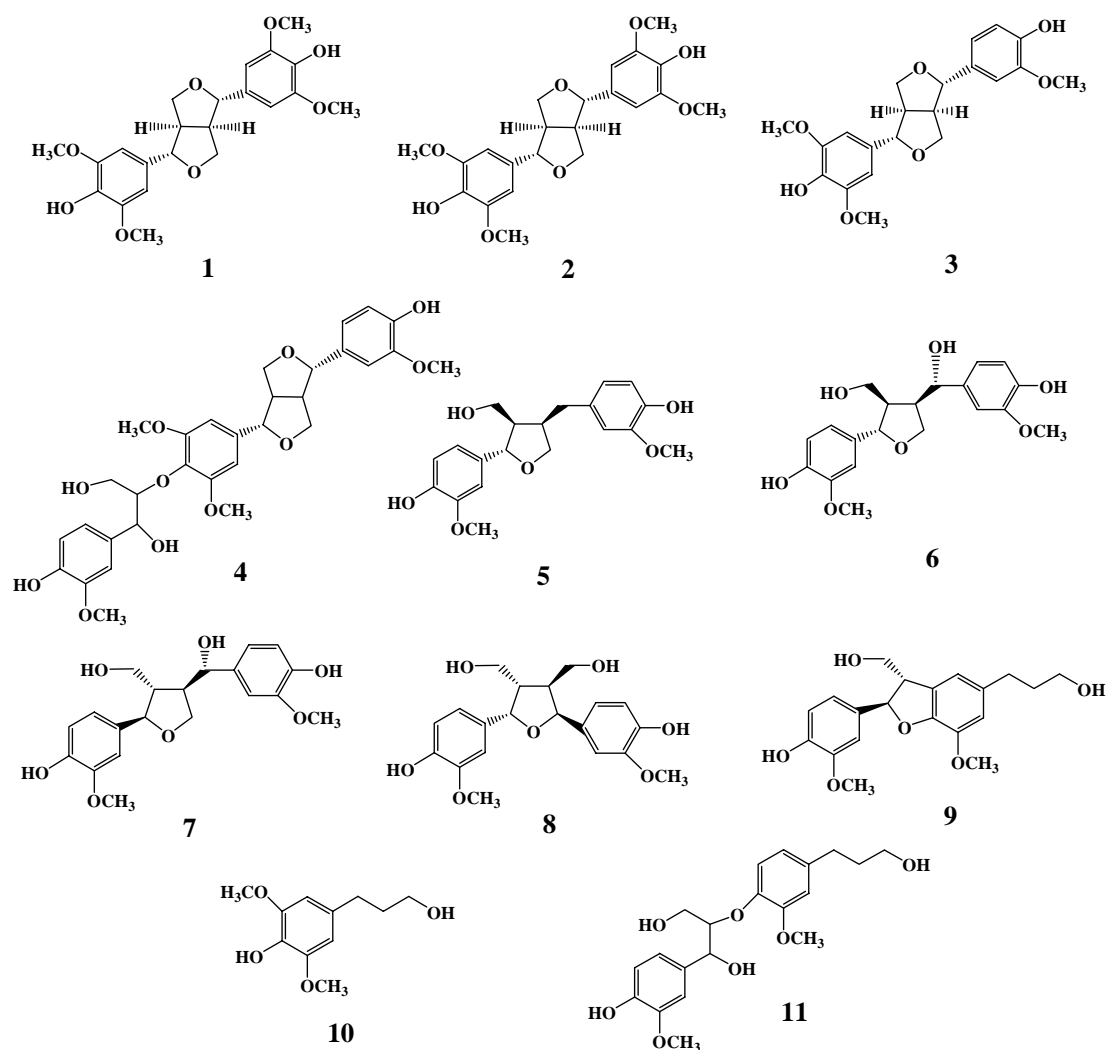


Figure 1. Lignanes and phenolic compounds isolated from *H. annuus*

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