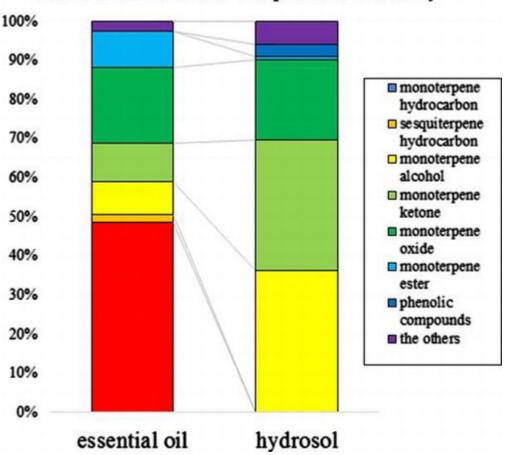Essential oils and hydrosols were extracted from rosemary harvested in different seasons, and the chemical compositions of volatile components in the two fractions were analyzed by gas chromatography–mass spectrometry (GC–MS). Enantiomers of some volatile components were also analyzed by enantioselective GC–MS. Classification of aroma components based on chemical groups revealed that essential oils contained high levels of monoterpene hydrocarbons but hydrosols did not. Furthermore, the enantiomeric ratios within some volatile components were different from each other; for example, only the (*S*)-form was observed for limonene and the (*R*)-form was dominant for verbenone. These indicate the importance of determining the enantiomer composition of volatile components for investigating the physiological and psychological effects on humans. Overall, enantiomeric ratios were determined by volatile components, with no difference between essential oils and hydrosols or between seasons.

Classification of aroma components based on chemical groups revealed that rosemary essential oils contained high levels of monoterpene hydrocarbons but hydrosols did not.