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**Recent progress in tissue optical clearing for spectroscopic application**

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**Keywords:** optical clearing agent, multiphoton microscopy, Raman spectroscopy, Raman microscopy, optical coherence tomography, laser speckle contrast imaging, tissue, skin

**Highlights:**

- In this review, the progress in optical clearing for multiphoton microscopy, Raman microscopy, NIR spectroscopy, confocal microscopy, optical coherence tomography, and speckle contrast imaging has been described in detail.
- The physical, molecular and physiological mechanisms of optical clearing have been described
- Future perspectives of using optical clearing was discussed

**Abbreviations:**

BABB - Benzyl Alcohol/ Benzyl Benzoate;

CARS - coherent anti-Stokes Raman spectroscopy;

CLSM – confocal laser scanning microscopy;

CM – confocal microscopy;

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