



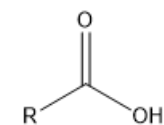
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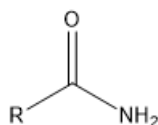
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Select the statement that is **not true** about the carboxylic acid and amide functional groups and their infrared absorptions.



1710-1780 cm^{-1}



1630-1690 cm^{-1}

- ☐ (A) When either of these functional groups absorbs infrared radiation, the excitation of an electron to an anti-bonding orbital is not occurring.
- ☐ (B) The carboxylic acid absorbs higher energy infrared radiation.
- ☐ (C) The difference in infrared absorptions of the different carbonyl groups ($\text{C}=\text{O}$) is consistent with the amide group having the stronger $\text{C}=\text{O}$ bond.
- ☐ (D) The absorption of infrared radiation by the $\text{C}=\text{O}$ group causes the carbon and oxygen atoms to vibrate with an increased amplitude.
- ☐ (E) The infrared absorptions of carboxylic acid and amide functional groups can be used to indicate the presence of these functional groups in organic molecules.

VIDEO SOLUTION



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