Chelation: Is Color the Proof?

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Chelation of nutritionally important minerals enhances bioavailability compared to simple metal salts. The extent of amino acid chelation dramatically affects the absorption of metal ions in both plants and animals. Existing test methods that measure amino acid chelation are extremely complex and difficult to interpret. Manufacturers and regulatory agencies are actively seeking reliable test methods for chelation. I have developed a new colorimetric test method to measure amino acid chelation that yields quick, reliable results. My novel approach utilizes ninhydrin dye that when reacted with amino acid chelates, forms a yellow color only when metals are chelated to amino acids. Free, non-chelated amino acids yield a purple color. This visual qualitative affirmation of chelation is easily adapted to quantitative measurement by UV-VIS spectrometry at 370nm. This discovery provides direct evidence of chelation and may be easily applied by testing laboratories as an inexpensive rapid test method.

Awards Won: