

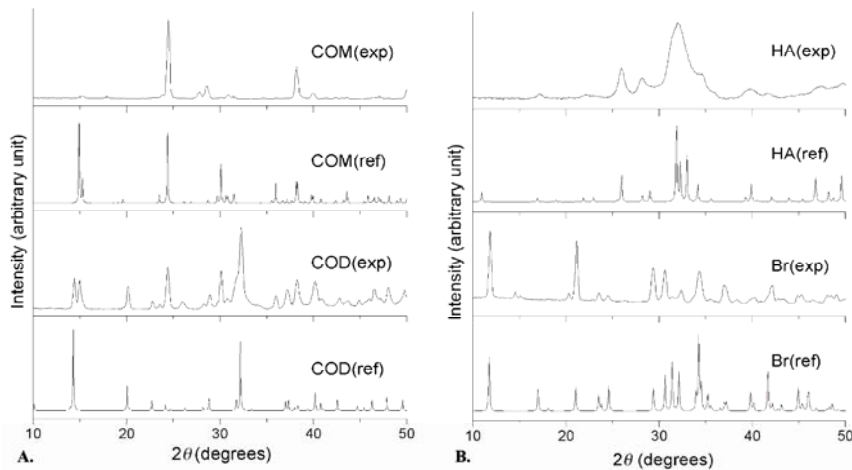
What is Kidney Stone Matrix?

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 NNIN Facility utilized: Characterization Facility

- ◆ Used powder XRD (Bruker-AXS GADDS) to classify kidney stone composition
- ◆ 48 total kidney stones -> 25 found to be “pure” calcium oxalate or phosphate

MAJOR OBSERVATIONS

- ◆ Extracted proteins
- ◆ Identified peptides by mass spectrometry (QSTAR Pulsar machine, Proteomic facility)
- ◆ Added 90 proteins to the kidney stone proteome



| Stone type (n) | Acidic ^B | Basic ^B | Average ^B | Average # proteins identified/stone | Total # different proteins ^C |
|----------------|------------------------------|----------------------------|----------------------|-------------------------------------|---|
| COM (9) | 22.7 (0.75 - 56) | 22.9 (8 - 56) | 22.8 | 30 (9 - 57) | 72 |
| COD (4) | 23.8 (8 - 42) | 39.4 (13 - 93) | 31.6 | 15 (7 - 25) | 32 |
| Apatite (9) | 20.7 (0.57 - 66) | 38.4 (0 - 100) | 29.5 | 13 (2 - 45) | 56 |
| Brushite (3) | 0.32 (0 - 0.63) ^D | 3.1 (2 - 5.3) ^D | 1.7 ^D | 19 (2 - 32) | 37 |

Publications

- ◆ **Canales BK**, Anderson L, Higgins L, Slaton J, Roberts KP, Liu N, Monga M: Comprehensive proteomic analysis of human calcium oxalate monohydrate kidney stone matrix. *Journal of Endourology*. (Fall 2008).
- ◆ **Canales BK**, Anderson L, Higgins L, Slaton J, Ensrud K, Roberts KP, Wu B, Kim IW, Monga M: What is the matrix? The first proteome of human calcium kidney stones. *Journal of Urology*. (Fall 2008).