Lab 6: Qualitative analysis of renal calculi

Methods:

1. **Test for Uric acid**

1-Put a small amount of the sample 1

2-Add 2-3 drops of concentrated nitric acid to HNO3

3- Heating in a water bath.

*(The test is positive if a red or yellow residue is obtained)*

(2) **Test for carbonate**

1- Add a little dilute hydrochloric acid (2M HCL) to a small portion of the sample2

*(Gas bubbles will indicate the presence of carbonate).*

(3) **Test for oxalate:**

1- Heat a part of the sample3 with 2 ml dilutes sulphuric acid (2M H2SO4) for 1 min.

2- Allow to cool to 60 -70 C

1. Add drop of, potassium permanganate (KMnO4 ) solution and Mix

*(The decolonization and evolution of bubbles will confirm the presence of oxalate.)*

**(4)Test for phosphates**

1- Dissolve a little of the sample 4 in a few ml of concentrated nitric acid HNO3

2- Add an equal volume of ammonium molybdate solution.

3- Heat to boiling

*(If phosphates are present, a yellow precipitate of ammonium phosphomolybdate is obtained)*

**5) Test for calcium**

1- Dissolve about 100 mg of the sample 5 by heating with 2 ml dilute hydrochloric acid (2M HCL)

2- Add 1 ml ammonium oxalate

*(A white precipitate of calcium oxalate shows the presence of calcium).*

Result:

|  |  |
| --- | --- |
| *Components* | *Result*  |
| *Uric acid* | *..........................................................................................................................................................................................................* |
| *carbonate* | *..........................................................................................................................................................................................................* |
| *oxalate* | *..........................................................................................................................................................................................................* |
| *phosphates* | *..........................................................................................................................................................................................................* |
| *calcium* | *..........................................................................................................................................................................................................* |