### General Information

**Lab Order Codes:** KAL1G  
**Synonyms:** EDS IV, COL3A1; Kallman syndrome (KS) sequencing; Hypogonatropic hypogonadism; Anosmia  
**CPT Codes:** 81406 – Molecular Pathology, Level 7  
**Test Includes:** Bi-directional sequence of the coding region and splice junctions.

### Logistics

**Test Indications:** Kallmann syndrome (KS) is typically characterized by hypogonadotropic hypogonadism and anosmia. The presence of a defective sense of smell, whether partial (hyposmia) or complete (anosmia) distinguishes KS from normosmic idiopathic hypogonadotropic hypogonadism with a normal sense of smell (nIHH), which can be associated with mutations in the GnRHR and GPR54 genes. Due to hypothalamic GnRH deficiency, males with KS demonstrate cryptorchidism, testicular atrophy and microphallus at birth and then subsequent failure to undergo a normal puberty during adolescence. Females with KS usually present with primary amenorrhea or infertility. Mutations in at least two genes have been shown to be associated with KS. Mutation in the X-linked KAL1 gene is associated with the classic genital and olfactory features of Kallmann syndrome, and in some cases, renal agenesis in males only. This is known as Type 1 Kallmann syndrome (KAL1). Type 1 KS is the result of abnormal anosmin-1 protein production due to KAL1 gene mutation.

**Lab Testing Sections:** Anatomic Pathology - Sendouts  
**Referred to:** GeneDx (G Dx Test: 2401)  
**Phone Numbers:**  
- MIN Lab: 612-813-6280  
- STP Lab: 651-220-6550  
**Test Availability:** Daily, 24 hours  
**Turnaround Time:** 3 weeks
Special Instructions: A completed GeneDx request form is required (select test 2401 under Other Genetic Disorders). Please submit requisition with specimen or patient sent to the laboratory.

Specimen

Specimen Type: Whole blood

Container: Lavender top (EDTA) tube

Draw Volume: 2-5 mL (Minimum: 1 mL) blood

Processed Volume: Same as Draw Volume

Collection: Routine blood collection

Special Processing: Lab Staff: Do Not centrifuge. Specimen should be sent in original collection container. Store and ship at refrigerated temperatures. Forward promptly. Note: Blood specimens can be stored refrigerated up to 7 days prior to shipping.

Patient Preparation: None

Sample Rejection: Mislabeled or unlabeled specimen; inappropriate specimen type

Interpretive

Reference Range: Interpretive report

Critical Values: N/A

Limitations: N/A

Methodology: Capillary sequencing

References: GeneDx, Inc. February 2018 (301) 519-2100 Fax (301) 519-2892

Updates: 2/6/2013: CPT update
            3/26/2014: CPT update