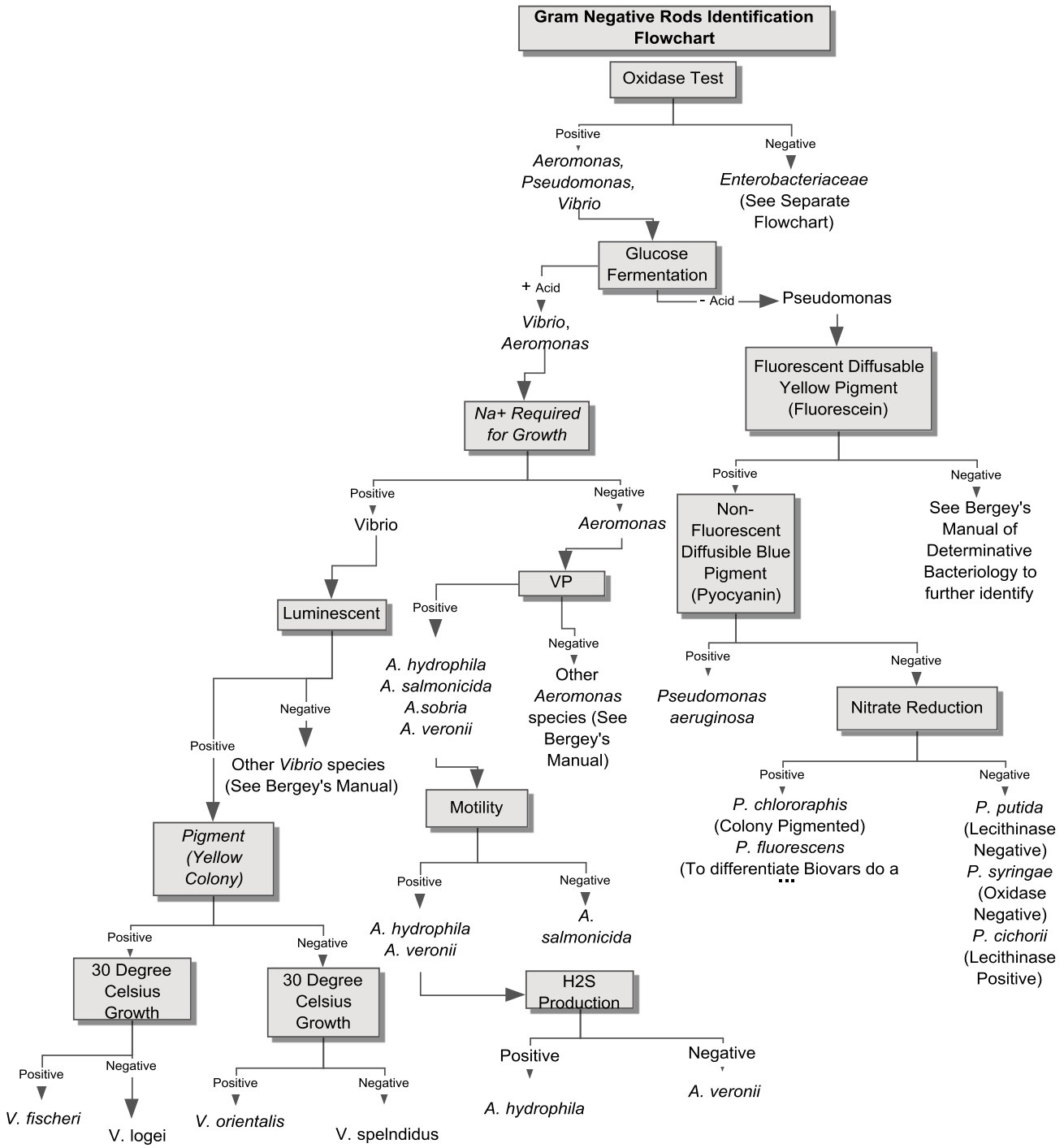




Family Enterobacteriaceae

Lactose Fermentation

Positive

Negative

Citrobacter diversus
Citrobacter freundii
Enterobacter aerogenes
Enterobacter cloacae
Enterobacter amnigenus
Enterobacter intermedius
Erwinia carotovora

Erwinia chrysanthemi
Escherichia coli
Klebsiella oxytoca
Klebsiella pneumoniae
(subsp. *ozaenae* and
pneumoniae)
Serratia fonticola
Serratia rubidaea

See Lactose Negative
Flowchart for
Enterobacteriaceae

Indole

Positive

Negative

Citrate

MR-VP

Positive

Negative

C. diversus
(VP neg.)
E. chrysanthemi
(VP and H2
S pos.)
K. oxytoca
(VP pos and H2
S neg.)

E. coli

Positive/Positive

Positive/Negative

Negative/Positive

E. intermedius

C. freundii
S. fonticola
K. pneumoniae

K. pneumoniae
E. aerogenes
E. cloacae
E. amnigenus
E. carotovora
S. rubidaea

H2S Production

Lysine Decarboxylase

Positive

Negative

Positive

??

Negative

C. freundii

S. fonticola
Motility pos.
K. pneumoniae
Motility neg.

K. pneumoniae subsp.
pneumoniae
Non-motile, No Pigment
S. rubidaea
Motile, Red pigment
E. aerogenes
Motile, No pigment

E. carotovora
Lysine
unknown but
Gelatinase
positive; none
above are
positive

E. cloacae
Acid from
sorbitol
E. amnigenus
No acid from
sorbitol

Family Enterobacteriaceae Lactose Negative ID Flowchart

Edwardsiella tarda
Erwinia cacticida
Morganella morganii
Proteus mirabilis
Proteus penneri
Proteus vulgaris
Providencia stuartii
Salmonella bongori
Salmonella enterica
Serratia marcescens
Serratia liquefaciens
Shigella spp. (*boydii*, *dysenteriae*,
flexneri)
Shigella sonnei
Yersinia enterocolitica
Yersinia pestis
Yersinia pseudotuberculosis

