**Shigella flexneri**

- Gram negative rods
- Non-Motile
- Facultative anaerobe
- Chemoorganotrophic (both respiratory and fermentative metabolism)
- Optimal temperature - 37°C
- Fermentation of glucose & other carbohydrates (formation of acid & sometimes gas)
- Oxidase negative
- Catalase positive
- Methyl red positive
- Voges-Proskauer negative
- Citrate negative
- Hydrogen sulfide (H₂S) negative
- Urea negative
- Reduction of nitrate to nitrite
- Intestinal pathogen - causative agent of bacillary dysentery
- Four species - *S. dysenteriae*, *S. flexneri*, *S. boydii*, & *S. sonnei*
- *S. dysenteriae* - endemic in Africa, Asia, & Latin America
- *S. boydii* - in India
- *S. flexneri* & *S. sonnei* - developed areas, including U.S.
- Fecal-oral or direct transmission
- Highly communicable - causes illness with as few as 200 organisms
- *S. dysenteriae* - produces Shiga toxin (responsible for most severe symptoms)
- Resistant to acidic environment of stomach
- Kills intestinal epithelial cells & forms mucosal ulcerations