## **Supplementary Table 1 VNS For Inflammatory Bowel Disease**

| Subjects                       |                     | Stimulation Method | Stimulation             | Stimulus       | Main Outcomes   |
|--------------------------------|---------------------|--------------------|-------------------------|----------------|---|
|                                |                     | and Site           | Parameters              | Duration       |   |
| VNS Animal studies             | S                   |                    |                         |                |   |
| Meregnani et al. <sup>62</sup> | Rats with TNBS-     |                    | 5 Hz, 10 sec on, 90 sec | 3 h/d for 5 d  | Weight loss and inflammatory indicators                                     |
|                                | induced colitis     | cervical VN        | off, 500 μs, 1 mA       |                | were decreased, and the multivariate index of colitis improved.             |
| Sun et al. <sup>63</sup>       | Rats with TNBS-     | Direct VNS; left   | 20 Hz, 30 sec on, 5 min | 3 h/d for 6 d  | DAI, histological scores, MPO activity,                                     |
|                                | induced colitis     | cervical VN        | off, 500 ms, 0.25 mA    |                | iNOS, TNF-, and IL-6 levels all   |
|                                |                     |                    |                         |                | considerably reduced.   |
| Jin et al. <sup>110</sup>      | Rats with TNBS-     | Direct VNS; left   | 5 Hz, 10 sec on, 90 sec | 3 h/d for 21 d | The autonomic route improved DAI,   |
|                                | induced colitis     | cervical VN        | off,                    |                | macroscopic, and microscopic damage.  |
|                                |                     |                    | 0.5 ms, 1.0-3.0 mA      |                |   |
| Meroni et al. <sup>111</sup>   | Mice with oxazolone | Direct VNS; right  | 5 Hz, 1 ms, 1 mA        | 5 min          | The survival rate increased, but colonic                                    |
|                                | induced Colitis     | cervical VN        |                         |                | and serum cytokines decreased.  |
| Payne et al. <sup>112</sup>    | Rats with TNBS-     | Direct VNS; the    | 10 Hz, 30 sec on, 5 min | 3 h/d for 5 d  | Stool quality and blood were improved,<br>but plasma C-reactive protein and |

|                                 | induced inflammation   | anterior abdor   | minal off,     |                |                         | inflammatory cell populations in the gut  |
|---------------------------------|------------------------|------------------|----------------|----------------|-------------------------|---|
|                                 | of the small intestine | VN               | 200 μs,        | 1.6 mA         |                         | were decreased.                           |
| Climical studies                |                        |                  |                |                |                         |   |
| Clinical studies                |                        |                  |                |                |                         |   |
|                                 |                        |                  |                |                |                         |   |
| Clarencon et al. <sup>113</sup> | 1 ileal CD I           | Direct VNS; left | 10 Hz, 30 se   | c 12 mo        | At month 12, there wa   | as a considerable clinical improvement, a |
|                                 | patient (CDAI c        | ervical VN       | on, 5 min of   | <u>.</u> ,     | gradual decrease in     | the CDAI score, and an endoscopic         |
|                                 | = 330)                 |                  | 500 μs, 0.5-1. | 0              | remission.              |   |
|                                 |                        |                  | mA             |                |                         |   |
|                                 |                        |                  |                |                |                         |   |
|                                 |                        |                  |                |                |                         |   |
| Bonaz et al. <sup>97</sup>      | 7 ileo-colonic I       | Direct VNS; left | 10 Hz, 30 se   | c >6 mo        | 5 patients progressed   | I to clinical, biological, and endoscopic |
|                                 | CD patients c          | ervical VN       | on, 5 min of   |                | remission, with restore | ed vagal tone.                            |
|                                 | (CDAI 220-450)         |                  | 500 μs, 0.25   | _              |                         |   |
|                                 |                        |                  | 1.25 mA        |                |                         |   |
|                                 |                        |                  |                |                |                         |   |
|                                 |                        |                  |                |                |                         |   |
|                                 |                        |                  |                |                |                         |   |
| D'Haens et al. <sup>114</sup>   | 16 biologic I          | Direct VNS;      | NA             | 1 min QD to 5  | CDAI, faecal calproted  | ctin, and SES-CD levels dropped, as did   |
|                                 | refractory CD N        | NA of site       |                | min QID for 16 | serum IL-1, TNF-, TNI   | F-, and IFN- levels.                      |
|                                 | patients (CDAI         |                  |                | wk             |                         |   |
|                                 | 220–450)               |                  |                |                |                         |   |
|                                 |                        |                  |                |                |                         |   |

| _ |                               |                |                  |                  |       |   |
|---|-------------------------------|----------------|------------------|------------------|-------|---|
|   |                               |                |                  |                  |       |   |
|   | Kibleur et al. <sup>115</sup> | 9 ileo-colonic | Direct VNS; left | 10 Hz, 30 sec    | 12 mo | CDAI, faecal calprotectin, anxiety level, and vagal tone were all |
|   |                               | CD and in the  |                  | CC               |       | 1   |
|   |                               | CD patients    | cervical VN      | on, 5 min off,   |       | improved.   |
|   |                               |                |                  | 500 μs, 0.5-1.25 |       |   |
|   |                               |                |                  | mA               |       |   |
|   |                               |                |                  |                  |       |   |

Abbreviations: CDAI, Crohn's Disease Activity Index; DSS, dextran sulfate sodium; iNOS, inducible nitric oxide synthase; MPO, myeloperoxidase; NA, not available; SES-CD, Simple Endoscopic Score for Crohn's Disease; TNBS,

<sup>2,4,6-</sup>trinitrobenzenesulfonic acid.