CLAIMS

What is claimed is:

1. A device for insertion into a body cavity, the device comprising:

an insertion member configured to be inserted into the body cavity;

~~an~~at least one expandable member coupled to the insertion member, the at least one expandable member capable of being expanded to apply pressure onto tissue within the body cavity;

a first member configured for storing a first endothermic reactant therein; and

a second member configured for storing a second endothermic reactant therein,

wherein the first and second members are configured to, in a state of the device, allow the first and second endothermic reactants to cooperate to effect an endothermic reaction to generate an endothermic product, ~~and~~

wherein the at least one expandable member is configured to receive at least one of the first ~~or second~~ endothermic reactant, the second endothermic reactant and the endothermic product through a channel within the insertion member,

wherein at least the first member is configured to be compressible to cause the device to be in said state, wherein compressing the first member reduces a volume within the first member, thereby forcing the first endothermic reactant stored in the first member and/or the second endothermic reactant stored in the second member to flow to cooperate with each other to effect the endothermic reaction, and pressuring the at least one of the first endothermic reactant, the second endothermic reactant and the endothermic product to flow through the channel into the at least one expandable member for expanding the at least one expandable member, and

wherein the insertion member comprises a plurality of compartments arranged successively along the insertion member, each compartment having coupled therewith a respective expandable member, each of the respective expandable members capable of being expanded in response to the at least one of the first endothermic reactant, the second endothermic reactant and the endothermic product received from the respective compartment, wherein a plurality of valves are arranged in the channel of

the insertion member, each valve arranged between adjacent compartments associated therewith and configured to allow the at least one of the first endothermic reactant, the second endothermic reactant and the endothermic product to flow through the valve from a first compartment of the adjacent compartments to a second compartment of the adjacent compartment when a pressure acting on the valve is equal to or exceeds a threshold pressure, the first compartment being closer to the first member than the second compartment.

2. The device according to claim 1, wherein the first member has stored therein the first endothermic reactant, and the second member has stored therein the second endothermic reactant, separately from the first endothermic reactant.

3. The device according to claim 1, comprising a separating member configured to, in a first state, block the first and second endothermic reactants from cooperating and, in a second state, allow the first and second endothermic reactants to cooperate to effect the endothermic reaction.

4. The device according to claim 3, wherein the separating member is configured to be breakable to change from the first state to the second state.

5. The device according to claim 4, wherein an opening of the second member is sealed by the separating member or the second member constitutes the separating member.

~~6. The device according to claim 3, wherein at least the first member is configured to be compressible to cause the device to be in said state, wherein compressing the first member reduces a volume within the first member, thereby forcing the first endothermic reactant stored in the first member and/or the second endothermic reactant stored in the second member to flow to cooperate with each other to effect the endothermic reaction.~~

~~7~~6. The device according to claim ~~6~~3, wherein the second member is located within the first member and is configured to be compressible to cause the device to be in said state, wherein compressing the first member at a region where the second member is located also compresses the second member, thereby reduces a volume within the second member and causes the separating member to break to allow the second endothermic reactant stored in the second member to flow out of the second member and into the first member to cooperate with the first endothermic reactant to effect the endothermic reaction.

~~8~~7. The device according to claim ~~6~~1, wherein the second member is located within the first member and is configured to be non-compressible, wherein compressing the first member reduces the volume within the first member, thereby forcing the first endothermic reactant stored in the first member to flow into the second member, via an opening in the second member, to cooperate with the second endothermic reactant stored in the second member to effect the endothermic reaction.

~~9~~8. The device according to claim ~~6~~1, further comprising a structure for housing the first member.

~~10~~9. The device according to claim ~~9~~8, wherein the structure comprises a latch mechanism configured to be releasably lockable between a lock state and a release state, and wherein in the lock state, the structure is configured to apply compressing pressure to compress the first member and maintain the first member in a compressed state, and in the release state, the structure is configured to house the first member without applying compressing pressure thereto.

~~11~~10. The device according to claim 1, wherein at least a portion of the at least one expandable member comprises pores configured for allowing a therapeutic substance in the at least one expandable member to discharge through the pores for delivery of the therapeutic substance to the tissue within the body cavity.

~~12~~11. The device according to claim 1, wherein the at least one expandable member comprises an inner expandable layer and an outer expandable layer, wherein the inner expandable layer is arranged within the outer expandable layer, and the inner expandable layer and the outer expandable layer are configured to provide an outer compartment for storing a therapeutic substance therebetween for delivery of the therapeutic substance to the tissue within the body cavity.

~~13~~12. The device according to claim ~~12~~11, wherein the outer expandable layer comprises pores configured for allowing the therapeutic substance between the inner ~~expendable~~expandable layer and the outer expandable layer to discharge through the pores for delivery of the therapeutic substance to the tissue within the body cavity.

~~14~~13. The device according to claim ~~12~~11, wherein at least a portion of the outer expandable layer is made of a biodegradable material for allowing the therapeutic substance between the inner ~~expendable~~expandable layer and the outer expandable layer to escape for delivery of the therapeutic substance to the tissue within the body cavity when the biodegradable material is degraded.

~~15~~14. The device according to claim 1, wherein the at least one expandable member is configured such that, prior to being expanded, an outer surface of the expandable member defines a receptacle, the receptacle configured for storing a therapeutic substance therein for delivery to the tissue within the body cavity when the expandable member is expanded.

~~16~~15. The device according to claim 1, further comprising a valve configured to, in a first state, provide one-directional fluid flow through the valve from the first member.

~~17~~16. The device according to claim 1, further comprising an external expandable member coupled to the insertion member at a predetermined distance from the distal end region, the external expandable member capable of being expanded to apply pressure onto an external region of the body cavity.

~~18~~17. The device according to claim 1, wherein the insertion member is configured so as to be adjustable in length.

~~19. The device according to claim 1, wherein the insertion member comprises a plurality of compartments arranged successively along the insertion member, each compartment having coupled therewith a respective expandable member, each expandable member capable of being expanded in response to the at least one of the first or second endothermic reactant and the endothermic product received from the respective compartment, wherein a plurality of valve is arranged in the channel of the insertion member, each valve arranged between adjacent compartments associated therewith and configured to allow the at least one of the first or second endothermic reactant and the endothermic product to flow through the valve from a first compartment of the adjacent compartments to a second compartment of the adjacent compartment when a pressure acting on the valve is equal to or exceeds a threshold pressure, the first compartment being closer to the first member than the second compartment.~~

~~20~~18. A method of fabricating a device for inserting into a body cavity, the method comprising:

forming an insertion member configured to be inserted into the body cavity;

providing ~~an~~at least one expandable member coupled to the insertion member, the at least one expandable member capable of being expanded to apply pressure onto tissue within the body cavity;

forming a first member configured for storing a first endothermic reactant therein; and

forming a second member configured for storing a second endothermic reactant therein, and

configuring the first and second members for allowing, in a state of the device, the first and second endothermic reactants to cooperate to effect an endothermic reaction to generate an endothermic product,

wherein said providing ~~an~~the at least one expandable member comprises configuring the at least one expandable member to receive at least one of the first

endothermic reactant, ~~or~~ the second endothermic reactant and the endothermic product through a channel within the insertion member,

wherein at least the first member is configured to be compressible to cause the device to be in said state, wherein compressing the first member reduces a volume within the first member, thereby forcing the first endothermic reactant stored in the first member and/or the second endothermic reactant stored in the second member to flow to cooperate with each other to effect the endothermic reaction, and pressuring the at least one of the first endothermic reactant, the second endothermic reactant and the endothermic product to flow through the channel into the at least one expandable member for expanding the at least one expandable member, and

wherein said forming an insertion member comprises configuring the insertion member to comprise a plurality of compartments arranged successively along the insertion member, each compartment having coupled therewith a respective expandable member, each of the respective expandable members capable of being expanded in response to the at least one of the first endothermic reactant, the second endothermic reactant and the endothermic product received from the respective compartment, wherein a plurality of valves are arranged in the channel of the insertion member, each valve arranged between adjacent compartments associated therewith and configured to allow the at least one of the first endothermic reactant, the second endothermic reactant and the endothermic product to flow through the valve from a first compartment of the adjacent compartments to a second compartment of the adjacent compartment when a pressure acting on the valve is equal to or exceeds a threshold pressure, the first compartment being closer to the first member than the second compartment.