# DPc10 Peptides Sampler Pack

Cat no. **A010-518**

**A convenient, cost effective sampler pack containing four DPc10 peptide derivatives (200µg each) as follows:**

1. DPc10 Peptide (Cat. A010-514)
2. DPc10 Inactive Peptide (Cat. A010-515)
3. Fluorescein DPc10 Peptide (Cat. A010-516)
4. Fluorescein DPc10 Inactive Peptide (Cat. A010-517)


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# DPc10 Peptide

Quality Control Certificate of Analysis
Catalogue No.: A010-514
Unit Size: 200µg
Lot no.: 642047

| | |
|---|---|
| **Description** | DPc10 peptide is a 36-residue peptide corresponding to the Gly2460-Pro2495 region of rabbit RyR2. It interacts with RyR2 and provokes abnormal channel activity usually seen in mutant RyR2 channels associated with CPVT. This peptide can be used to provoke pathological RyR2 behaviour in wild-type RYR2 channels. The peptide binds at an interface between domains of RYR2, “unzipping” these domains and altering channel function. The DPc10 binding site is preserved in RYR2 from all mammalian species.<br><br>DPc10 (0.5-5 µM) elevates Ca2+-leak, increases Ca2+-spark activity, is pro-arrhythmic, and provokes hypertrophy in cardiac myocytes.<br><br>DPc10 in the current form is not cell permeable. The product is useful in applications that permit access to RYR2 directly (via whole cell patch, skinned cells, black lipid membrane, vesicles, or upon delivery to cytoplasm). |
| **Quantity supplied** | 200µg net peptide* (48.735 nmoles) |
| **Peptide name** | DPc10 Peptide |
| **Peptide sequence** | GFCPDHKAAMVLFLDRVYGIEVQDFLLHLLEVGFLP |
| **N-terminus** | Amine |
| **C-terminus** | Acid |
| **Counter ions** | Trifluroacetate (TFA) |
| **Molecular weight** | 4103.835 |
| **Purity** | 97.28% (by HPLC) |
| **HPLC analysis** | |

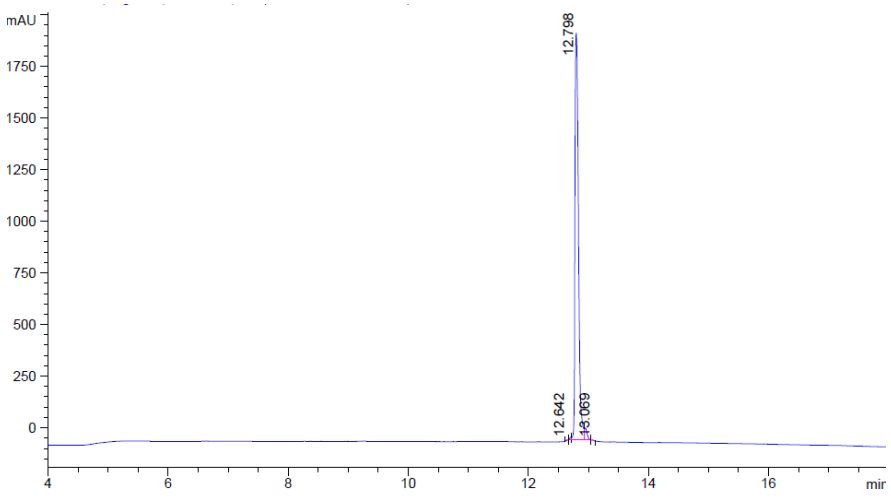


**Image: HPLC analysis of DPc10 Peptide**. Analysis carried out using 100Å 4.6 x 150mm column, gradient from 10%-90% acetonitrile, in 15 minutes. Dissolved in DMSO. Purity determined as 97.28%.

**MS analysis**

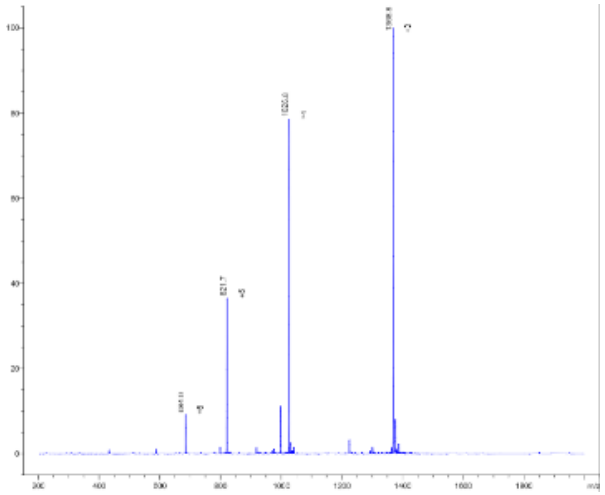

**Image**: **MS Analysis of DPc10 peptide**. Molecular ion predicted: 4103.835 observed: 4103.835 ([M+3H]). The range of molecular ions observed is due to the various multiply charged forms of the peptide ([M+3H], [M+4H], etc.).

**Appearance**

Lyophilised off-white solid

**Solubilisation**

Dimethyl sulfoxide (DMSO), use minimum volume (97.47µl = 500µM peptide) to limit solvent concentration in experiments.

**Storage**

Store desiccated at -20°C for up to 1 year in solid form. Dissolve in DMSO immediately before use in experiments.

**Notes**

The product was purified in acetonitrile and water containing 0.1% trifluoroacetic acid (TFA) prior to lyophilisation. The product will therefore be present as its trifluoroacetic acid salt.

*Peptide is supplied by net peptide weight. Whilst the purity of the material has been shown to be >95%, the net peptide content (NPC) is lower due to counterions and residual water molecules present in the material after purification. To compensate for this, the amount of peptide weighed out is adjusted so that the weight of active material received is exactly as stated on the vial. This means that the total mass supplied will be in excess of 200µg, but there will be exactly 200µg of the active peptide component in the vial.

**The DPc10 Peptide range**

1. DPc10 Peptide (Cat. A010-514)
2. DPc10 Inactive Peptide (Cat. A010-515)
3. Fluorescein DPc10 Peptide (Cat. A010-516)
4. Fluorescein DPc10 Inactive Peptide (Cat. A010-517)


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# DPc10 Inactive Peptide

Quality Control Certificate of Analysis
Catalogue No.: A010-515
Unit Size: 200µg
Lot no.: 642048

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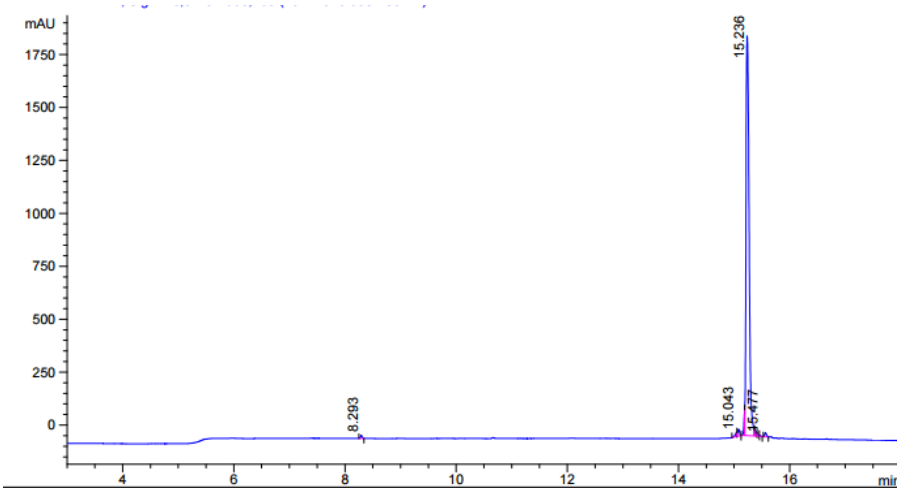
|---|---|
| **Description** | DPc10 inactive peptide is a 36-residue peptide that differs from DPc10 Gly2460-Pro2495, rabbit) at one position (R2475S) and represents the sequence of a known CPVT mutant RyR2 domain. This peptide binds weakly or fails to bind to the DPc10 interface and does NOT affect channel function. It serves as a negative control for research projects using DPc10 peptide.<br><br>DPc10 inactive in the current form is not cell permeable. The product is useful in applications that permit access to RyR2 directly (via whole cell patch, skinned cells, black lipid membrane, vesicles, or upon delivery to cytoplasm). |
| **Quantity supplied** | 200µg net peptide* |
| **Peptide name** | DPc10 Inactive Peptide |
| **Peptide sequence** | GFCPDHKAAMVLFLDSVYGIEVQDFLLHLLEVGFLP |
| **N-terminus** | Amine |
| **C-terminus** | Acid |
| **Counter ions** | TFA |
| **Molecular weight** | 4034.726 |
| **Purity** | 95% (by HPLC) |
| **HPLC analysis** | |




**Trace: HPLC Analysis of DPc10 Inactive Peptide**. Analysis carried out using 100 Å 4.6 x 50mm column, gradient from 0%-80% acetonitrile, in 8 minutes. Purity determined as 95%.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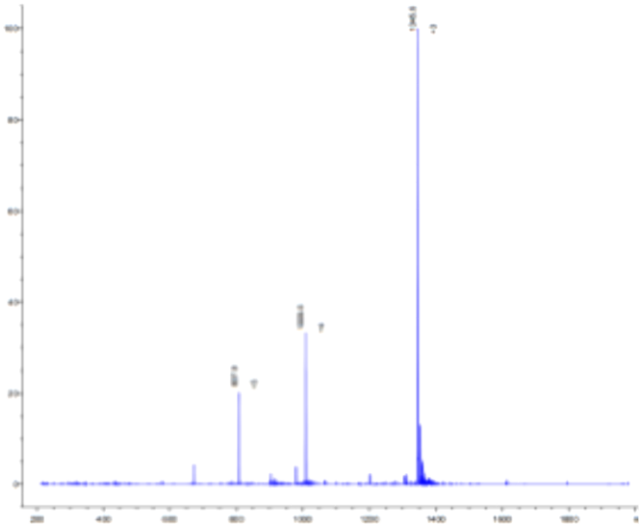
**MS analysis**



**Trace: Mass Spectrometric Analysis of Inactive DPc10 Peptide**. Molecular ion predicted: 4034.726 observed: 4034.1 [M+3H]. The range of molecular ions observed is due to the various multiply charged forms of the peptide ([M+3H], [M+4H], etc.).

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| **Appearance** | Off white powdered solid. |
| **Solubilisation** | DMSO use minimum volume to limit solvent concentration in experiments. |
| **Storage** | Store desiccated at -20°C for up to 1 year in solid form. Dissolve in DMSO immediately before use in experiments. |
| **Notes** | The product was purified in acetonitrile and water containing 0.1% trifluoroacetic acid (TFA) prior to lyophilisation. The product will therefore be present as its trifluoroacetic acid salt.<br>*Peptide is supplied by net peptide weight. Whilst the purity of the material has been shown to be >95%, the net peptide content is lower due to counterions and residual water molecules present in the material after purification. To compensate for this the amount of peptide weighed out is adjusted so that the weight of active material received is exactly as stated on the vial. This means that the total mass supplied will be in excess of 200µg, but there will be exactly 200µg of the active peptide in the vial. |
| **The DPc10 Peptide range** | 1. DPc10 Peptide (Cat. A010-514)<br>2. DPc10 Inactive Peptide (Cat. A010-515)<br>3. Fluorescein DPc10 Peptide (Cat. A010-516)<br>4. Fluorescein DPc10 Inactive Peptide (Cat. A010-517) |


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# Fluorescein DPc10 Peptide

Quality Control Certificate of Analysis
Catalogue No.: A010-516
Unit Size: 200µg
Lot no.: 642049

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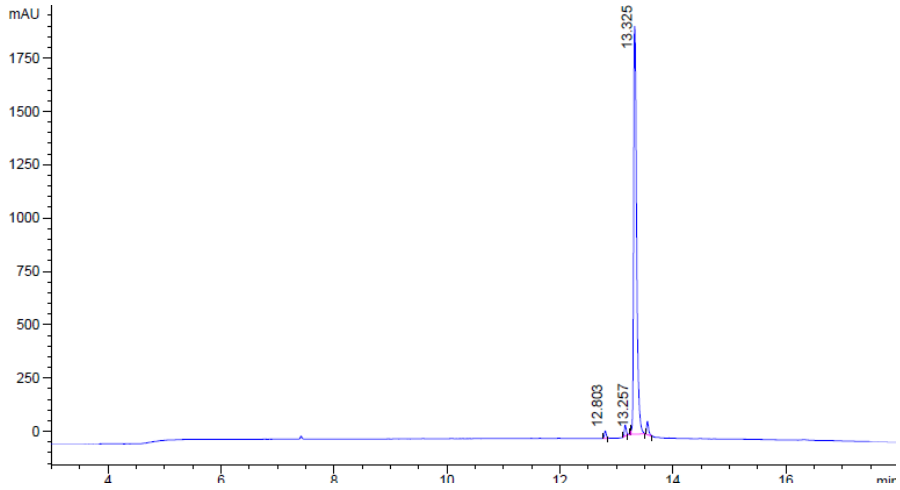
| **Description** | Fluorescein derivative of the DPc10 peptide.<br><br>DPc10 peptide is a 36-residue peptide corresponding to the Gly2460-Pro2495 region of rabbit RyR2. It interacts RyR2 and provokes abnormal channel activity usually seen in mutant RyR2 channels associated with CPVT. This peptide can be used to provoke pathological RYR2 behaviour in wild-type RYR2 channels. The peptide binds at an interface between domains of RyR2, “unzipping” these domains and altering channel function. The DPc10 binding site is preserved in RYR2 from all mammalian species.<br><br>DPc10 (0.5-5 µM) elevates Ca2+-leak, increases Ca2+-spark activity, is pro-arrhythmic, and provokes hypertrophy in cardiac myocytes.<br><br>DPc10 in the current form is not cell permeable. The product is useful in applications that permit access to RYR2 directly (via whole cell patch, skinned cells, black lipid membrane, vesicles, or upon delivery to cytoplasm). |
| **Quantity supplied** | 200µg net peptide* |
| **Peptide name** | Fluorescein DPc10 Peptide |
| **Peptide sequence** | 5Flu-GFCPDHKAAMVLFLDRVYGIEVQDFLLHLLEVGFLP |
| **N-terminus** | 5 Carboxyfluorescein |
| **C-terminus** | Acid |
| **Counter ions** | Trifluroacetate (TFA) |
| **Molecular weight** | 4462.155 |
| **Purity** | 95% |
| **HPLC analysis** |  |

**Trace: HPLC Analysis of Fluorescein DPc10 Peptide.** Analysis carried out using 100Å 4.6 x 150mm column, gradient from 10%-90% acetonitrile, in 15 minutes. Dissolved in DMSO. Purity determined as 95%.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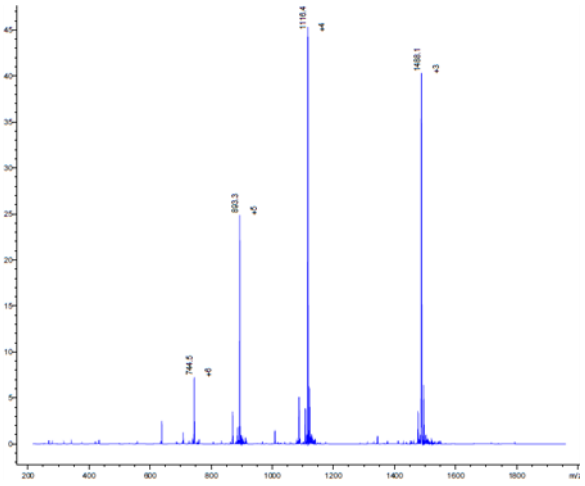
**MS analysis**



**Trace**: Molecular ion predicted: 4462.155, observed: 4461.3 [M+3H]. The range of molecular ions observed is due to the various multiply charged forms of the peptide ([M+3H], [M+4H], etc.).

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| **Appearance** | Lyophilised yellow powdered solid |
| **Solubilisation** | Dimethyl sulfoxide (DMSO), use minimum volume to limit solvent concentration in experiments. |
| **Storage** | Store desiccated at -20°C for up to 1 year in solid form. Dissolve in DMSO immediately before use in experiments. |
| **Notes** | The product was purified in acetonitrile and water containing 0.1% trifluoroacetic acid (TFA) prior to lyophilisation. The product will therefore be present as its trifluoroacetic acid salt.<br><br>*Peptide is supplied by net peptide weight. Whilst the purity of the material has been shown to be >95%, the net peptide content (NPC) is lower due to counterions and residual water molecules present in the material after purification. To compensate for this, the amount of peptide weighed out is adjusted so that the weight of active material received is exactly as stated on the vial. This means that the total mass supplied will be in excess of 200µg, but there will be exactly 200µg of the active peptide component in the vial. |
| **The DPc10 peptide range** | 1. DPc10 Peptide (Cat. A010-514)<br>2. DPc10 Inactive Peptide (Cat. A010-515)<br>3. Fluorescein DPc10 Peptide (Cat. A010-516)<br>4. Fluorescein DPc10 Inactive Peptide (Cat. A010-517) |


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# Fluorescein DPc10 Inactive Peptide

Quality Control Certificate of Analysis
Catalogue No.: A010-517
Unit Size: 200µg
Lot no.: 642050

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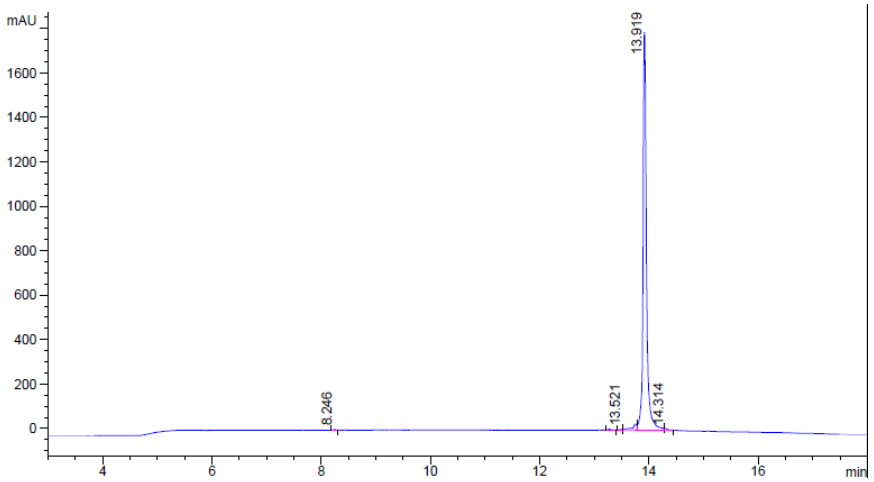
|---|---|
| **Description** | Negative control for Fluorescein DPc10 Peptide.<br><br>DPc10 inactive peptide is a 36-residue peptide that differs from DPc10 (Gly2460-Pro2495, rabbit) at one position (R2475S) and represents the sequence of a known CPVT mutant RYR2 domain. This peptide binds weakly or fails to bind to the DPc10 interface and does NOT affect channel function.<br><br>DPc10 inactive in the current form is not cell permeable. The product is useful in applications that permit access to RYR2 directly (via whole cell patch, skinned cells, black lipid membrane, vesicles, or upon delivery to cytoplasm). |
| **Quantity supplied** | 200µg net peptide*. |
| **Peptide name** | Fluorescein DPc10 Inactive Peptide |
| **Peptide sequence** | 5Flu-GFCPDHKAAMVLFLDSVYGIEVQDFLLHLLEVGFLP |
| **N-terminus** | 5 Carboxyfluorescein |
| **C-terminus** | Acid |
| **Counter ions** | Trifluroacetate (TFA) |
| **Molecular weight** | 4393.046 |
| **Purity** | 97% |
| **HPLC analysis** |  |

**Trace: HPLC Analysis of Fluorescein DPc10 Inactive Peptide.** Analysis carried out using 100Å 4.6 x 150mm column, gradient from 10%-90% acetonitrile, in 15 minutes. Dissolved in DMSO. Purity determined as 97%.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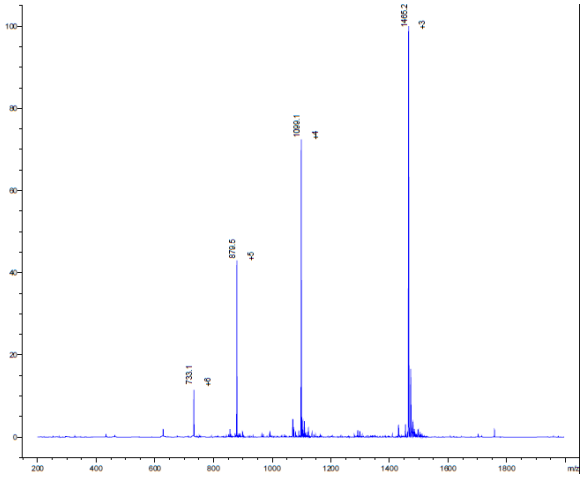
**MS analysis**




**Trace**: Molecular ion predicted: 4393.046, observed: 4392.6 [M+3H]. The range of molecular ions observed is due to the various multiply charged forms of the peptide ([M+3H], [M+4H], etc.).

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|---|---|
| **Appearance** | Lyophilised yellow powdered solid |
| **Solubilisation** | Dimethyl sulfoxide (DMSO), use minimum volume to limit solvent concentration in experiments. |
| **Storage** | Store desiccated at -20°C for up to 1 year in solid form. Dissolve in DMSO immediately before use in experiments. |
| **Notes** | The product was purified in acetonitrile and water containing 0.1% trifluoroacetic acid (TFA) prior to lyophilisation. The product will therefore be present as its trifluoroacetic acid salt.<br><br>*Peptide is supplied by net peptide weight. Whilst the purity of the material has been shown to be 97%, the net peptide content (NPC) is lower due to counterions and residual water molecules present in the material after purification. To compensate for this, the amount of peptide weighed out is adjusted so that the weight of active material received is exactly as stated on the vial. This means that the total mass supplied will be in excess of 200µg, but there will be exactly 200µg of the active peptide component in the vial. |
| **The DPc10 peptide range** | 1. DPc10 Peptide (Cat. A010-514)<br>2. DPc10 Inactive Peptide (Cat. A010-515)<br>3. Fluorescein DPc10 Peptide (Cat. A010-516)<br>4. Fluorescein DPc10 Inactive Peptide (Cat. A010-517) |